Transition for Students with Autism: A Multi-Case Qualitative Study Exploring How Male Students with Autism Experience Postsecondary Education

Christine Bojanowski
Bellarmine University, christine.salameh@gmail.com

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Transition for Students with Autism: A Multi-Case Qualitative Study Exploring How Male Students with Autism Experience Postsecondary Education

Christine Bojanowski

Bellarmine University
Bellarmine University

The Undersigned Faculty Committee Approves the

Dissertation of

Christine Bojanowski

Transition for Students with Autism: A Multi-Case Qualitative Study Exploring How

Male Students with Autism Experience Postsecondary Education

______________________________________________________

Dr. Kathleen Cooter
Professor, Annsley Frazier Thornton School of Education, Bellarmine University

______________________________________________________

Dr. Elizabeth Dinkins
Assistant Professor, Annsley Frazier Thornton School of Education, Bellarmine University

______________________________________________________

Dr. Lisa Ruble
Professor, College of Education, University of Kentucky
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Christine Bojanowski
Abstract

This dissertation was multi-case study designed to examine how three male students with autism experienced the academic, social, and self-advocacy aspects of postsecondary education. The study was driven by the following conceptual framework concepts: entrainment, social capital, self-determination, and disability studies. The research question for the study was: How do male students with autism experience the academic, social, and self-advocacy needs of postsecondary education from the perspectives of the students themselves, their parents, their professors, their disability coordinators, and their tutors? Data were collected via multiple interviews with the students, their parents, their professors, and the disability coordinators at their university. Additional data were gathered through observations of the students in class, documentation, and course syllabi. Results indicated that each of the students had support with tasks involving executive function, each of the students had at least one comorbid mental health disorder that impacted his postsecondary experience, and each of the students was content with his respective level and type of socialization. Frustration and a sense of uncertainty for the future permeated their experiences. Finally, individuals providing support for students with autism experienced tension regarding their support. Implications of the study included the impact of executive function on self-determination and the importance of including families while supporting students with autism in postsecondary programs. Additionally, the study had epistemological implications regarding the level of support and the goal of postsecondary education.

Keywords: autism, executive function, mental health, postsecondary education, transition
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Mom, you are my rock. Thank you for everything. Words cannot express my gratitude for your support and for your example of how a strong, independent, smart, kind, and loving person should live her life.
Dedication

To all the mothers who tirelessly fight to fill in the missing pieces
and to ensure successful and productive lives for their children with autism.
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Chapter 1: Introduction to the Study

Since 1975, children with disabilities have been given the legal right to an elementary and secondary public school education ("Education for All Handicapped Children Act," 1975). The Act stipulated that students with disabilities would receive a free, appropriate public education in the least restrictive environment suitable for their needs. Multiple follow-up studies were done to determine postschool outcomes for students who received special education services under the newly implemented law (Edgar, 1987; Hasazi, Gordon, & Roe, 1985; Hasazi, Gordon, Roe, et al., 1985; Hasazi, Johnson, Hasazi, Gordon, & Hull, 1989; Mithaug, Horiuchi, & Fanning, 1985; Schalock et al., 1986; Wehman, Kregel, & Seyfarth, 1985). The results of these studies showed that students identified as having disabilities significantly underperformed their postsecondary peers in rate of employment, wages, benefits, skill level of jobs, and hours worked. Edgar (1987) stated that “… society appears to be responding to a problem (handicapped individuals) with innovative programs (special education), yet in reality nothing productive is being accomplished (the individuals in question are not better off because of the programs)” (p. 556). Students with disabilities were not being provided with the skills necessary to become contributing adult members of society during their transition years, which begin at age 16 and span approximately seven years (McDonnell & Hardman, 1985).

Bridges from School to Work

A publication by the Office of Special Education and Rehabilitative Services (OSERS) was the catalyst for modern day transition services (Will, 1983). Transition services for students with disabilities became a national priority, with sustained employment as the goal. While employment status provided an objective measure of success, other facets of adulthood were not neglected. Will stated that “… this concern with employment does not indicate a lack of interest
in other aspects of adult living. Success in social, personal, leisure, and other adult roles enhance opportunities both to obtain employment and to enjoy its benefits” (1984, p. 2).

The conceptual framework proposed by Madeleine Will had three bridges from high school to employment: (a) the top bridge represented students receiving either no services or those services available for the general population; (b) the middle bridge represented services available to prepare for employment, but would be available for only a specified time period; and (c) the bottom bridge represented students who would need ongoing services for supported employment (1984). While the third bridge did not have federal funding, it was an introduction to the concept of supported employment for individuals with significant disabilities. The term supported employment was first used by Paul Wehman (Wehman et al., 1985). He described supported employment as the employment of individuals with severe disabilities who needed support services as they engaged in their jobs.

The Bridges from School to Work publication supported cooperation between vocational education and vocational rehabilitation, as well improved collaboration with businesses in the community (Will, 1983). Essential to the program was that students with disabilities would have ongoing contact with non-disabled peers. It encouraged a shift from day programs for individuals with significant disabilities to work opportunities. In addition, the publication called for further research for individuals with mild disabilities. Soon after this report, multiple requests for transition support programs were submitted to the federal government; the number of requests increased as transition services were added to the Education for the Handicapped Act (Halpern, 1992).

**Transition Services**

**Definition of Transition.** Despite the supports of special education services, students
with disabilities continued to leave high school without adequate preparation for adult life
demonstrated by high dropout rates, significant unemployment and underemployment, low
involvement in postsecondary education, and economic instability (D. R. Johnson & Emanuel,
2000). Transition services were seen as necessary to support students and parents as they
coordinated the special education, general education, and community service agencies deemed
necessary to improve outcomes for students with disabilities (D. R. Johnson & Emanuel, 2000).
The definition of transition as adopted by the Division of Career Development and Transition of
the Council for Exceptional Children (DCDT) is as follows:

Transition refers to a change in status from behaving primarily as a student to assuming
emergent adult roles in the community. These roles include employment, participating in
post-secondary education, maintaining a home, becoming appropriately involved in the
community, and experiencing satisfactory personal and social relationships. The process
of enhancing transition involves the participation and coordination of school programs,
adult agency services, and natural supports within the community. The foundations for
transition should be laid during the elementary and middle school years, guided by the
broad concept of career development. Transition planning should begin no later than age
14, and students should be encouraged, to the full extent of their capabilities, to assume a
maximum amount of responsibility for such planning (Halpern, 1994, p. 117).

Four components of transition planning as presented by the DCDT are student empowerment,
student self-evaluation, selection of post-school transition goals, and identification of educational
experiences that will support the goals (Halpern, 1994).

**Transition Services required by IDEA.** As a result of the findings of follow-up studies
regarding the outcomes for students with disabilities as they entered adulthood (e.g. Hasazi,
Gordon, & Roe, 1985; Mithaug et al., 1985), the Individuals with Disabilities Education Act (IDEA), a revision and renaming of the Education for All Handicapped Children Act that was passed in 1990, added transition services to the legally required programs for students with disabilities (Clair, Church, & Batshaw, 2007).

**National Longitudinal Transition Study.** Soon after the passage of IDEA, the results of the National Longitudinal Transition Study (NLTS) were released (Wagner et al., 1991). The NLTS was mandated by the U.S. Congress in 1983 to discover factors affecting success in postsecondary school and employment as well as personal independence. The goal of the NLTS was to provide an understanding of the experiences of special education students as they transitioned from high school to young adulthood. Data were collected primarily through phone interviews with parents and young adults as well as a mail survey. The results of the study were a nationally representative report on students who received special education services from their high school in 1985 (Wagner et al., 1991).

The results of the NLTS indicated that despite some positive achievements such as participation in life skills training and job readiness programs (90%), participation in job placement programs (60%), and engagement in paid employment at some time during high school (56%), students with disabilities were more likely to drop out of high school (32%), less likely than their non-disabled peers to be enrolled in post-secondary education programs (14%), less likely to be living independently (12%), and more likely to have a complete lack of productive activities (22%) (Wagner et al., 1991).

In 2011, results of the National Longitudinal Transition Study-2 (NLTS2) were released (Newman et al., 2011). Differences in the students from NLTS to NLTS2 included a decrease in the number of students with mental retardation, an increase in the students with other health
impairments (including autism and attention deficit/hyperactivity disorder), and earlier identification and initial service for a disability (Wagner, Cameto, & Newman, 2003). Young adults with disabilities were found by NLTS2 to be less likely to enroll in postsecondary education (60%), were less likely to live independently (45%), less likely to be married (13%), and more likely to have a lower hourly pay rate for employment (Newman et al., 2011). Wehmeyer (2011) asks, “… so why is it that, 30 years on, we still tolerate anything less than real jobs and real lives?” (p. 154).

**Research Support for Transition Practices**

More than twenty years ago, when asked how well youth with disabilities were being prepared for adulthood, Halpern (1992) answered candidly that “… we still have a long way to go” (p. 5). Test and Grossi (2011) state, “… we have made progress … but we are just out of the starting gate!” (p. 175). Research regarding the transition of youth with disabilities to adulthood in education, employment, and independent living is sparse.

The findings of a recent review of research literature on programs designed to support the transition to adulthood support the statements of Halpern (1992) and Test and Grossi (2011) regarding the lack of research in the field (Cobb, Lipscomb, Wolgemuth, & Schulte, 2013). Under contract to the U.S. Department of Education, the authors reviewed studies from April 2008 through June 2011 using the standards of the What Works Clearinghouse (WWC). An essential aspect of included studies was the direct measure (opposed to indirect measures) of post-high school achievement. The results were not conclusive in that not a single study was able to meet the most rigorous WWC evidence standards, described as *meets standards without reservations* (Cobb et al., 2013), for either the group-design or the single-case design studies. Three group-design studies met the WWC evidence standards *with reservations* (Baer, Daviso
POSTSECONDARY TRANSITION FOR STUDENTS WITH AUTISM

III, Flexer, Queen, & Meindl, 2011; Cimera, 2010; Karpur, Clark, Caproni, & Sterner, 2005), while 13 single-case design studies met the standards with reservations (e.g., Cihak, Alberto, Kessler, & Taber, 2004; Ganz & Sigafoos, 2005; Mechling, Gast, & Barthold, 2003). Of the 43 studies eligible for screening, only one study specifically related to the transition concerns of youth with autism was considered in the with reservations category (Ganz & Sigafoos, 2005). In summary, no studies supported interventions for the support of transition with a high degree of confidence. According to Erik W. Carter, the reason for the lack of rigorous quantitative research in the field of transition is the historical lack of funding for the type of research that would satisfy What Works Clearinghouse’s without reservations criteria (personal communication, November 6, 2015).

The field of special education has been slow to fully embrace qualitative research methods (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Pugach, 2001). Gelbar, Smith, and Reichow (2014) conducted a survey of research into students with autism attending postsecondary programs and identified 17 qualitative studies. However, only seven of the qualitative studies had a methods section, indicating that the remaining studies would be better considered essays or reports, as opposed to qualitative studies (e.g., Connor, 2012; MacLeod, Lewis, & Robertson, 2013). Upon further review, nine additional qualitative articles related to the postsecondary education of students with autism were found (e.g., Camarena & Sarigiani, 2009; Fleischer, 2012). There are a limited number of high quality qualitative studies into the postsecondary experiences of student with autism.

“Tidal Wave” of Youth with Autism Graduating from High School

The transition of students with autism to young adulthood is a topic receiving national attention (Snow, 2015). It is estimated that 50,000 students with autism graduate from high
school each year (Shattuck, Roux, et al., 2012). As they graduate, the students move from entitlement programs mandated by IDEA to eligibility programs, with no guarantee of support (Hughes, 2009). The description of this phenomenon is aptly named a “tidal wave” as the incidence rate of youth with autism has increased from 4 or 5 in 100,000 before 1985 (Yeargin-Allsopp et al., 2003) to 1 in 45 children based on a study conducted in 2014 (Zablostsky, Black, Maenner, Schieve, & Blumberg, 2015). The special education category of autism is the fastest growing IDEA category (Ryan, Hughes, Katsiyannis, McDaniel, & Sprinkle, 2014). Upon graduation, parents of students with autism are left to navigate the transition process on their own and are sometimes faced with two-year waiting lists (Snow, 2015).

**Transition Results for Students with Autism**

The NLTS2 study reported results by the 12 IDEA categories (Newman et al., 2011). Students with autism spectrum disorders (ASD) were one of the disability groups to complete high school at a high rate (96.7%), but completed postsecondary education at a much lower rate than students of other disability categories (17.5%). While 43.9% of youth with autism had at least one enrollment in a postsecondary program, only 38.8% reported finishing a degree or certificate (Newman et al., 2011). Additionally, paid employment was reported by 37.2% of youth with autism, but they averaged only 24.1 hours per week of work (Newman et al., 2011).

Halpern (1994) considered the importance of several other factors for the transition period, including relationships, independent living, and community involvement. Youth with autism were the least successful regarding these aspects as compared to their peers with disabilities; 17% of youth with autism reported living independently, 3% had a child, 0.9% married, and only 48.2% reported that they saw friends outside of school or work on a regular basis (Newman et al., 2011).
In summary, consideration has been given to the lack of rigorous academic research, the increasing number of students with autism, the lack of support upon graduation from high school, and the statistics of youth with autism as they enter young adulthood as compared to their peers with other disabilities.

**Problem Statement**

Autism is the fastest growing special education eligibility category (Ryan et al., 2014). It is estimated that 50,000 students with autism graduate each year (Shattuck, Roux, et al., 2012). Once students with autism graduate from high school, the level of services decreases significantly, to the point that the process of graduating from high school with a disability has been given the metaphor of *falling off a cliff* (Bagenstos, 2014). The statistics reporting the post-high school outcomes of youth with autism are discouraging (Newman et al., 2011). Meanwhile, no quantitative studies are considered to be supportive of specific programs or interventions *without reservations* (Cobb et al., 2013), nor is there a qualitative literature base in the field (Gelbar et al., 2014). Wehmeyer (2011) called for a sense of urgency regarding the support of youth with disabilities during the transition to adulthood. He concluded, “… and we, or more rightly, people with disabilities, haven’t a moment to lose” (p. 156). It is critically important that students with autism are supported during the transition to adulthood by research-based interventions and programs, whether they enroll in postsecondary education or enter the workforce.

**Purpose of the Study**

The purpose of this study is to understand how male students with autism experience the academic, social, and self-advocacy demands of postsecondary education. The perspectives of parents, professors, disability coordinators, and tutors add to the understanding of the experience
of the students with autism. Of the 34.7% of high school graduates with autism who attend college (Shattuck, Narendorf, et al., 2012), only 38.8% completed a two- or four-year program (Newman et al., 2011). Wehman et al. (2014) state, “… more is unknown than known… there is a desperate need for an aggressive research agenda to inform practice and improve post-school outcomes for youth with ASD” (p. 37). This study means to improve post-school outcomes by understanding and analyzing the experiences of students with autism from multiple perspectives as they navigate postsecondary education.

**Conceptual Framework**

A review of the literature on the transition of students with disabilities to adulthood led to the inclusion of self-determination, social capital theory, and disability theory in the conceptual framework. Self-determination was selected because of the importance of self-advocacy in a successful transition to adulthood for students with disabilities (Wehmeyer & Schwartz, 1997). Trainor (2008) posits that social capital is an essential component of the transition of students with disabilities to adulthood. Disability theory considers the impact of social barriers on the experiences of students with disabilities (Shakespeare, 1996) and was included to ensure that there was consideration of the barriers faced by students with autism. Students with autism may insist on sameness and have distress at small changes in schedule (American Psychiatric Association, 2013). The theory of entrainment (Ancona & Chong, 1996) was selected to consider the experiences of students with autism in postsecondary education through the lens of time.

**Social capital theory.** Social capital is defined as resources resulting from social relations that provide benefits to individuals (Lin, 2001). Students with autism may benefit from support of their family, as well as from resources within the community accessed via social
relationships between their parents and others (Coleman, 1988). Parents of students from middle-class families have been found to be more likely to have close ties with other parents, including professionals of various types, while parents of students from working-class and poor families were more likely to have close ties within the extended family (Horvat, Weininger, & Lareau, 2003). Parents with social capital are able to provide a bridge to resources for their child (D. H. Kim & Schneider, 2005). Trainor (2008) argues for the study of social capital as a component of conceptual frameworks regarding the postsecondary transition of students with disabilities. Horvat et al. (2003) call for the inclusion of social capital as a construct in qualitative research. While families provide significant support during students’ younger years, the students are expected to self-advocate upon entering a postsecondary program (Turnbull, Turnbull, Erwin, Soodak, & Shogren, 2011).

**Self-Determination.** Self-determination is defined as being the central agent responsible for events that occur in, and making decisions related to, one’s life without unreasonable influence from others (Sands & Wehmeyer, 1996). In a study of students with learning disabilities, Troiano (2003) found that students gained insight into their disabilities and understood the relevance of being responsible for their goals at different times in their development. Self-determination has been shown to be an important factor for a student’s successful transition to adulthood (Wehmeyer & Schwartz, 1997). Students who are more intrinsically motivated are more likely to be academically successful than students who are less self-determined (Deci, Vallerand, Pelletier, & Ryan, 1991).

**Entrainment.** The theory of entrainment (Ancona & Chong, 1996) focuses on the effect of pace, rhythm, and cycles on performance in organizations. Entrainment is defined as “… the adjustment or moderation of one behavior either to synchronize or to be in cycle or rhythm with
another behavior” (Ancona & Chong, 1992, p. 7). Each cycle represents the completion of a phenomenon and repeats periodically. In academia, the semester is the primary event to which the members of the institution entrain. Students modify the pace of their activities to meet the expectations during specific times of the semester (Ancona & Chong, 1999). As students adapt to the demands of the semester, a rhythm develops and creates “… a dominant temporal ordering that serves as a powerful coordination mechanism for that entity” (Ancona & Chong, 1996, p. 253).

Postsecondary education follows predictable changes in rhythm during each semester. Students begin the semester at a slow pace as they establish an understanding of the demands of respective professors. As the first series of assignments are due, their pace quickens, only to slow again as they prepare for midterms. Once again the pace quickens, exams are taken, and the pace again slows. Predictably, as the students near the end of the semester, they write papers and study for finals, perhaps staying up all night to ensure that expectations are met.

Students with autism are likely to struggle with changes in pace and rhythm. Autism is defined as having restricted patterns of behavior; individuals with autism may insist on sameness, may be inflexible regarding adherence to routines, may have distress at small changes in schedule, and may have difficulty with transitions (American Psychiatric Association, 2013). Students with autism may have difficulty entraining to the pace, cycle, and rhythms of postsecondary education.

Disability Theory. Prior to the Industrial Revolution, individuals with impairments, while they were not able to fully participate in society, were able to contribute to the best of their ability on farms or within small businesses (Oliver, 1990). The labor market emerged with the rise of capitalization and individuals with disabilities were considered to be a social problem and
a source of shame (Finkelstein, 1980). The social construction of disability occurred as the rise of capitalism considered individuals with impairments to be unqualified for the newly developing labor market (Oliver, 1990). The source of the disability, however, was seen to be in the individual, not in society (Siebers, 2008). Known as the medical model, the view of disability as an impairment in a body that requires medical attention produced a distinction between able-bodied and disabled individuals (Oliver, 1990).

In contrast to the medical model, the social model of disability considers the source of disability to be in society; by removing societal barriers and focusing on social justice, individuals with impairments would be able to be fully contributing members of society (Shakespeare, 1996). The social movement led to the removal of many structural barriers, enhanced in the United States by the passage of the Americans with Disabilities Act in 1990 (Tremain, 2005). With the emergence of critical disability studies, the focus has shifted from societal barriers to the examination of how knowledge and power structures may impact ideas and ideologies regarding disability (Watson, 2012).

The conceptual framework provided the lens through which the study was developed. The framework drove the methodology selection and interview question development process. Through the lens of self-determination, I considered how the students’ ability to make decisions impacted their experience in postsecondary education. Social capital theory guiding the investigation into the social support networks of the students and how those networks contributed to their experiences. Entrainment drove the consideration of time as it impacted the experience of students with autism in postsecondary programs. Disability theory offered a lens through which to consider possible barriers for students with autism.
Research Question

The objective of this study was to understand how male students with autism spectrum disorder manage the post-secondary experience. The research question guiding the study was: How do male students with autism experience the academic, social, and self-advocacy needs of postsecondary education from the perspectives of the students themselves, their parents, their professors, their disability coordinators, and their tutors?

Methodology

This was a qualitative multi-case study of three students with autism. Data were collected from the students themselves as well as from parents, professors, and disability coordinators supporting the students. The participants were interviewed over the course of the Fall 2016 semester on multiple occasions. Students were also observed as they engaged in their postsecondary experience.

Data for each case were analyzed independently. Analysis included a pre-coding examination of the data, first-cycle coding, second-cycle coding, and individual case results. The study follows a replication strategy to increase the reliability of the results. Subsequently, a cross-case analysis was conducted and assertions were developed.

Assumptions

Methodological assumptions. The design of this study follows Yin’s (2014) work on case study research. Case study research is declared to be a linear, yet iterative, process. The author considers the results of the study to be generalizable to the conceptual framework as opposed to being generalizable to specific populations. Unlike quantitative studies, participants are not a “sample,” but are an intentionally selected group of individuals who represent a specific research design and theoretical framework. Similar to quantitative studies, replication is the
method by which reliability of the results is supported. Yin (2014) stresses the importance of considering rival explanations. In addressing rival explanations and ruling them out, the findings of the study are strengthened.

**Ontological assumptions.** Ontology, the theory of being, is the branch of philosophy that considers what is real, reflects as to whether there is a difference between appearance and reality, and contemplates the relationship between minds and bodies (Palmer, 1994). An ontological assumption of this interpretive research study was that there are multiple realities, as what is reality to one individual may not be reality to another (Creswell, 2013). Erickson (1985) describes that interpretive researchers must be “… naïve realists – believers in the taken-for-granted reality we perceive at first glance – by continually taking the leap of faith that is necessary” (p. 126). As I, an interpretive researcher, considered my own perceptions, I also strove to understand, analyze, and report the varying realities of others. The reality of one participant or reader may differ from the reality of others (Creswell, 2013). The subjective perspectives of each actor were identified and objectively analyzed using interpretive research (Erickson, 1985).

**Epistemological assumptions.** Epistemology, the theory of knowledge, is the branch of philosophy that answers questions as to what knowledge is, what can be known (if anything), and what the difference is between opinion and knowledge (Palmer, 1994). An epistemological assumption of qualitative research was that I, as researcher, would try to study participants as closely as possible, leading to the development of knowledge built on the individual views of the participants (Creswell, 2013). The results of this study were subjective and context dependent (Creswell, 2013).

As opposed to positivist research, in which history is expected to repeat itself,
interpretive research anticipates that the same group of participants seen on one day may be markedly different than on the next day (Erickson, 1985). Erickson states that the subjective result of interpretive research is insight into the “… capacity for a set of individuals to live together successfully in the midst of the current moment, reacting to the moment just past and expecting the next moment to come” (1985, p. 129). He focuses on the present moment, as the actions of one individual may affect the entire group, leading to an entirely different set of experiences from day-to-day or even from moment to moment. As a researcher, I anticipated that the experiences of the participants varied on a day-to-day basis.

**Axiological assumptions.** According to Heron and Reason (1997), the axiological question inquires as to the type of knowledge that may be innately valuable. Qualitative research is the process of co-creating reality; the axiological question asks why we engage in that process. An assumption of this study was that by gaining knowledge about the experiences of students with autism attending postsecondary education I would potentially be able to add value to their experiences, and the experiences of others, by advocating for them and their needs once the study is complete.

**Key Terms**

**Autism spectrum disorder.** Autism spectrum disorder (ASD) is defined as a developmental disability characterized by persistent deficits in social communication and social interaction as well as restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013). Following the Diagnostic and Statistical Manual, 5th Edition (DSM-5), Asperger’s syndrome is considered to be under the umbrella of ASD and not a separate diagnostic category. The use of the term *autism* is used throughout this study to represent autism spectrum disorders.
**Asperger’s syndrome.** Individuals with Asperger’s Syndrome have a deficit in social communication and social interaction, but have a developmental history of typically gaining verbal language (American Psychiatric Association, 2000). Individuals who had been diagnosed with Asperger’s Syndrome prior to the release of DSM-5 were grandfathered in to the overarching category of ASD. As the criteria for this study was that students would have received services under the IDEA eligibility category of autism, individuals with Asperger’s disorder would be considered as meeting that criteria as there is not a specific IDEA category of Asperger’s Syndrome.

**Entitlement versus eligibility programs.** Entitlement services are programs that all individuals who meet the criteria are guaranteed the right in which to participate, such as K-12 public education. Eligibility services are programs for which an individual may be eligible, but may not be able to participate in due to constraints such as program budgets. Vocational rehabilitation is an example of an eligibility program (Hughes, 2009).

**Incidence rate.** An incidence rate is the ration of the number of new cases of a disease over a certain period of time to the number of individuals in the population who are at risk of that disease (Hill, Zuckerman, & Fombonne, 2014).

**Neurodiversity.** Neurodiversity is a belief that individuals with autism are a part of the normal variation of “naturally occurring and inherently desirable human variability” and that having autism is not a deficiency (Straus, 2010, p. 542). Straus (2010) defines neurodiversity as “a belief that autism is not a defect or pathology, but rather an aspect of naturally occurring and inherently desirable human variability” (p. 542).

**Prevalence rate.** The prevalence rate is the ratio of the number of individuals at a specific point of time who have a disorder to the number of people in the population (Hill et al.,
The term transition to adulthood will be used to identify the time period after high school and approximately eight years into young adulthood (Newman et al., 2011).

Vocational rehabilitation. Vocational rehabilitation is a process by which individuals with disabilities are provided training and support so as to gain employment (Elliott & Leung, 2005).

Overview of the Study

The purpose of this study was to understand the experiences of three students with autism who were attending a postsecondary program from their perspective as well as from the perspective of their parent, one of their professors, and their disability coordinator. Research is limited regarding students with autism attending postsecondary education (Cobb et al., 2013). However, more than 50,000 students with autism are graduating from high school each year (Shattuck, Roux, et al., 2012). The results of this study may influence the experiences for many of those students as they pursue a postsecondary education.
Chapter 2: Literature Review

An estimated half million students with autism will become young adults over the next ten years (Roux, Shattuck, Rast, Rava, & Anderson, 2015). Each year, 48,500 students with autism turn 18 (Shattuck, Roux, et al., 2012) and “… about 50,000 youth with autism exit high school” in the United States (Roux et al., 2015). Data from the National Longitudinal Transition Study – 2 (NLTS2) indicated that 43.9% of high school students with autism will enroll in some type of a postsecondary school, including two-year college, four-year college, vocational, business, or technical school (Newman et al., 2011). However, there is a significant gap in the literature regarding postsecondary education for students with autism (Barnhill, 2014; Camarena & Sarigiani, 2009; Cobb et al., 2013; Friedman, Warfield, & Parish, 2013; Gelbar et al., 2014; Pinder-Amaker, 2014; Roux et al., 2015; Shmulsky & Gobbo, 2013; Wehman et al., 2014).

The purpose of this study was to understand how male students with autism experienced the academic, social, and self-advocacy demands of postsecondary education. The research question guiding the study was: How do male students with autism experience the academic, social, and self-advocacy needs of postsecondary education from the perspectives of the students themselves, their parents, their professors, their disability coordinators, and their tutors?

Overview of Literature Review

The goal of this literature review was to position the study of students with autism attending postsecondary education within the broader context of the literature on students with disabilities during the time of transition to adulthood. The field of transition has an emerging literature base (e.g. Landmark, Ju, & Zhang, 2010; Wehmeyer, 2011). However, no studies were considered to provide rigorous support for the use of any specific interventions during the transition period (Cobb et al., 2013). The literature base regarding students with autism
attending postsecondary programs was insufficient to provide guidance to scholars or practitioners (Gelbar et al., 2014). In a report on indicators of youth during the transition to young adulthood, Shattuck stated, “One thing we discovered early in this project is how little data is available to create the meaningful indicators related to autism” (Roux et al., 2015, p. 6).

The literature review was a compilation of three major research topics. The first section, Transition to Adulthood, began with the evolution of the concept of transition to adulthood and reviewed the historical legislative events that affected the education of students with disabilities. Key longitudinal transition studies were reviewed, as well as the current evidence base in the field of the transition of students with disabilities into adulthood. An introduction was provided to the demands of scientifically-based evidence as called for by the No Child Left Behind Act of 2001 (NCLB, 2002). The response of scholars in special education to the call for rigorous research was reviewed. A brief overview of the literature on students with disabilities attending college concluded the transition section.

The second section of the literature review was Autism. The research question for this study was specific about the experiences of students with autism in college. Autism, as defined by the most recent edition of the Diagnostic and Statistical Manual of the American Psychiatric Association (2013), was described, followed by longitudinal study results specific to students with autism. The literature base for students with autism during the transition period was significantly smaller than that of students with other disabilities (Cobb et al., 2013). The single review of the literature on students with autism in a postsecondary setting was reviewed in detail (Gelbar et al., 2014).

The third section of the literature review was the Conceptual Framework. The concepts of social capital, self-determination, entrainment, and disability studies were introduced as well
as the rationale for considering students with autism in postsecondary programming through the interconnected lens of the conceptual framework.

**Transition to Adulthood**

A century ago, the term *adolescence* was used to describe the life stage between childhood and adulthood (Settersten Jr., Furstenberg Jr., & Rumbaut, 2005). With an earlier onset of puberty and extended opportunities for secondary and postsecondary education, as well as later ages for independent living, employment, marriage, and childbirth, the need for a stage after adolescence and before adulthood has emerged (Furstenberg Jr., Rumbaut, & Settersten Jr., 2005). This phase is called the *transition to adulthood* and begins as young adults graduate from high school and generally ends before the age of 30 (Settersten Jr. et al., 2005). Halpern (1992) describes transition as “a period of *floundering* that occurs for at least the first several years after leaving school as adolescents attempt to assume a *variety* of adult roles in the communities” [emphasis in original] (p. 203). Adulthood is a complex construct achieved via varying paths: relationships, independent living, childbearing, employment, and education (Osgood, Ruth, Eccles, Jacobs, & Barber, 2005). Two themes regarding the transition to adulthood emerged from the research of Settersten Jr. et al. (2005).

The first theme is that the process of moving from adolescence to adulthood has become longer, more complex, and less orderly over the last fifty years. For these reasons, the transition to adulthood is now more challenging for all youth. The second theme is that a large share of youth in the general population draws heavily on the resources of their families as they make this transition (Osgood, Foster, Flanagan, & Ruth, 2005a, p. 4). Similar to typically developing young adults, youth with disabilities are transitioning to adulthood more slowly than in the past and with a greater dependence on family support.
Brief historical overview of transition services in the U.S. Transition services have had a relative brief place in the history of special education services.

Early 1900’s. Early research in vocational support emphasized vocational adjustment which was the process of assisting and evaluating workers to ensure that they were engaged in appropriate work (Kitson, 1925).

1950s. The Vocational Rehabilitation Act of 1954 funded the education of professionals so as to support individuals in need of rehabilitation. Funding was also provided to “… expand rehabilitation facilities, to expand services available to persons with mental illness and mental retardation, and provide funds for research and to states to upgrade rehabilitation agencies” (Elliott & Leung, 2005, p. p. 323).

1960s – 1974. Although not called transition services in the mid-twentieth century, programs were provided to aid students with cognitive impairments as they entered young adulthood. Tiedeman (1961) proposed a model of vocational development that considered the decision making process during two periods: a period of anticipation and a period of adjustment. Career support for students with disabilities during the 1960s was provided through work-study programs; in the 1970s students with disabilities engaged in career education (Halpern, 1994). Jepsen and Dilley (1974) reviewed eight vocational decision making models and concluded that the models were similar but not interchangeable. The authors were not able to select a specific model that may best predict vocational decisions.

The Vocational Rehabilitation Act was amended in 1967 to support individuals who had impairments with vision and hearing; amendments in 1973 included Section 504 which required that programs accepting federal funds to ensure that the program was accessible for individuals
with disabilities; and amendments in 1978 included support for independent living services (Elliott & Leung, 2005).

1975 – 1984. While students with disabilities were granted the right to a free and appropriate public education with the passage of the Education for all Handicapped Children Act "Education for All Handicapped Children Act" 1975), the provision of elementary and secondary education did not translate directly to employment, postsecondary education, or involvement in the community at the same level as non-disabled peers (Hasazi, Gordon, & Roe, 1985; Mithaug et al., 1985). In 1983, the federal government introduced a transition initiative, the first federal use of the term transition (Halpern, 1994).

Bridges from School to Work. The publication by the Office of Special Education and Rehabilitative Services (OSERS) called the Bridges from School to Working Life (BSW) was the catalyst for modern day transition services (Will, 1983). Transition services for students with disabilities became a national priority, with sustained employment as the goal. While employment status provided an objective measure of success, other facets of adulthood were acknowledged. Will stated that “… this concern with employment does not indicate a lack of interest in other aspects of adult living. Success in social, personal, leisure, and other adult roles enhance opportunities both to obtain employment and to enjoy its benefits” (1984, p. 2).

The conceptual framework proposed by Madeleine Will had three bridges from high school to employment: the top bridge represented students receiving either no services or those services that were available for the general population; the middle bridge represented services that would be available to prepare for employment, but would be available for only a specified time period; and the third bridge represented students who would need ongoing services for supported employment (1984). While the bottom bridge did not have federal funding, it was an
introduction to the concept of supported employment for individuals with significant disabilities (p. 4).

The Bridges from School to Work program was guided by the federal government, but run through the states, “… since no single federal agency is responsible for program assistance, evaluation, or funding … programs are supported by a mixture of state appropriations and federal assistance through the Social Service Block Grant and Medicaid” (Will, 1983, p. 10). The primary outcome targeted by the BSW model was employment, although social interactions and leisure activities were also considered important (Rusch & O'Reilly, 1991).

The Bridges from School to Work publication supported cooperation between vocational education and vocational rehabilitation, as well improved collaboration with businesses in the community (Will, 1983). The program necessitated that students with disabilities would have ongoing contact with non-disabled peers. The BSW model encouraged a shift from day programs for individuals with significant disabilities to work opportunities. In addition, the BSW called for further research for individuals with mild disabilities.

The BSW proposal was an initiative by the Office of Special Education Services to fund projects supporting transition (Kohler, 1993). The implications of the BSW model included renewed efforts to develop cooperative programs with vocational education and vocational rehabilitation to serve all student with disabilities; improvement of community-based job training and placement within the school’s vocational preparation program; and development of service models for all students that allow regular and frequent contact with non-disabled peers (Will, 1984, p. 4).

Postsecondary education was considered an important aspect of the BSW program with the intent of “stimulating research and program development for persons with learning disabilities
and other mild educational handicaps” (Will, 1984, p. 4)

Soon after this report, multiple requests for transition support programming to support the transition goal of employment were submitted to the federal government; grant funding was further supported as transition services became a part of legislation for individuals with disabilities (Halpern, 1992).

1984 – 1989. Students with disabilities continued to demonstrate markedly poorer performance as compared to typically developing peers in areas of employment, postsecondary education, independent living, and socialization (Hasazi, Gordon, Roe, et al., 1985; Mithaug et al., 1985). In a review of the literature on supporting students with learning disabilities in college, Nelson and Lignugaris/Kraft (1989) found that while universities had begun to support students with disabilities, there was little empirical research regarding the effectiveness of the supports.

Longitudinal Transition Studies

An early longitudinal study considered the employment status of students who were two years out of high school and found that youth with disabilities were more likely to be unemployed, have lower wages, have fewer benefits, work fewer hours, and work in jobs requiring less skill than their non-disabled peers (Hasazi et al., 1989). The outcome for women with disabilities was significantly less favorable than for men with disabilities (p. 249). The study found support for vocational classes as students with disabilities who had vocational training were more likely to be employed (Hasazi et al., 1989, p. 251).

National Longitudinal Transition Study. In 1987, under contract with the U.S. Office of Special Education Programs, the National Longitudinal Transition Study of Special Education Students (NLTS) was started (Wagner et al., 1991). The participants included 8,000 youth ages
13 to 21 who were high school students in special education during the 1985 - 1986 school year. The sample included students from all 11 federal special education disability categories and was a national representation, supporting generalization to youth with disabilities. At the time of the study, autism was not considered a separate disability as it was added as an eligibility classification in the 1990 amendment of the IDEA Act (Zirkel, 2011). Prior to the amendment, children with autism were considered severely emotionally disturbed in 10 states, a category they shared with students with schizophrenia (Mack, 1980). Six states had separate definitions for students with autism in their special education policies and Mack (1980) stated that

… the policy of the remaining 32 states and the District of Columbia is silent in this area. It is unclear whether these states count autistic children as emotionally disturbed for funding purposes although they are not included in the ‘emotionally disturbed’ definition. However, since autism is defined as a handicapping condition it would appear that autistic children are eligible for special education in these states (Mack, 1980, p. 10).

While autism was definitely a disability qualifying for special education services prior to the addition of autism as a category under IDEA in 1990, it is unclear which funding category supported their services.

**Historical characteristics of students with disabilities.** The most prevalent classification for students with disabilities was the classification of learning disabled (55.7%) followed by the classification of mentally retarded (23.9%) and emotionally disturbed (10.5%) (Wagner, Blackorby, Cameto, Hebbeler, & Newman, 1993). Students with disabilities were more likely than typically developing students to be male (68.5%), African American (24.2%), from a household with an income below $25,000 (68.3%), and in a single-parent household (36.8%) (Wagner et al., 1993).
Secondary school programs in regular schools. Students with disabilities were most likely to attend regular secondary schools with typically developing peers (90%) and spent 70% of their time in regular education classrooms (Wagner et al., 1993). Vocational education courses were commonly engaged in by students with disabilities; by their senior year, 89% of the students with disabilities had taken a vocational education class (Wagner et al., 1993). Students with disabilities were generally included in regular education classes with 70% of the students with disabilities spending time in regular education classes and only 3% of students with disabilities spending their entire day in self-contained special education classrooms (Wagner et al., 1993).

Secondary school programs in special schools. Students in three disability categories – deaf, visually impaired, and multiply handicapped – were more likely to attend special schools than students with other disabilities (Wagner et al., 1991). Vocational coursework had a greater emphasis in special schools with 62.4% of students with multiple handicaps but attending regular schools taking academic courses while 46.8% of similar students attending special schools taking academic courses (Wagner et al., 1993).

Secondary school performance. Students with disabilities struggled regarding metrics designed to measure secondary school achievement. Failure was common, with 58.1% of students with a disability reporting failure of a regular education course (Wagner et al., 1993). Students classified as emotionally disturbed were most likely to fail a regular education course (74.0%), to be absent (15.3 days), and to have a low GPA (2.1) (Wagner et al., 1993).

Secondary school completion. School completion for students with disabilities attending regular high schools was reported to be graduation for 67% of the students, dropping out for 30% of the students, and aging out for 3% (Wagner et al., 1993). Students with emotional
disturbances (50% of the students with emotional disturbances) were most likely to drop out, while students who were deaf/blind (8%) were least likely to drop out (Wagner et al., 1991).

**Social integration.** Social isolation was reported by parents for 14% of the students, a statistic that was more likely for students who were more severely disabled, female, and enrolled in special education courses (Wagner et al., 1991). Single-parenthood was more likely for young women with disabilities (20%) than their nondisabled peers (Wagner et al., 1993). Parents reported that 12% of students with disabilities had been arrested, with a majority of those students receiving services under the category of emotional disturbance (Wagner et al., 1991).

**Independent living.** The number of students with disabilities who lived independently was significantly lower than their non-disabled peers. During the first two years after high school, 83% of students with disabilities lived at home with their parents; three to five years after high school 55% of them continued to live at home (Wagner et al., 1993).

**Employment.** Students with disabilities had a lower rate of employment than typically developing students with 46% of students with disabilities reporting employment after being out of high school for two years (Wagner et al., 1993). Full-time competitive employment was reported by 24.7% of students with disabilities two years out of high school; that number increased to 43% by three years later (Wagner et al., 1993). Students who were high functioning, male, residents of suburban areas, and from homes with higher incomes were more likely to be employed (Wagner et al., 1991). High functioning students were able to read signs, tell time on an analog clock, count coins, use a phone book, and make phone calls (Wagner et al., 1991).

**Postsecondary education.** Enrollment in postsecondary education programs for students with disabilities was significantly lower for students with disabilities (14%) than the general
population of youth (53%) (Wagner et al., 1993). Students who were deaf (60%), hard of hearing (60.4%), and visually impaired (57%) were most likely to have attended postsecondary school from three to five years after high school as compared to non-disabled peers (Wagner et al., 1993). Postsecondary vocational school (15.9%) was more common for attendance by students with disabilities than two-year college (11.8%) or four-year college (4.2%) (Wagner et al., 1993).

**Productive engagement outside the home.** The NLTS measured the general independence of youths with regard to three dimensions: participation in work or education outside the home, residential independence, and social participation (Wagner et al., 1993). Students who were male, white, and high school graduates were more likely to have gains in independence than females, minorities, and dropouts (Wagner et al., 1993). Students who were not independent were not likely to be receiving services to increase their independence; only 4% of students who were socially inactive received either life skills training or occupational therapy while only 8% received vocational assistance (Wagner et al., 1993). Over time, students with disabilities demonstrated gains in independence with 6% of students with disabilities considered as fully independent in the first two years after high school and 20% of students three years later (Wagner et al., 1993).

**Students with autism.** At the time of the NLTS data collection, autism was not a classification for special education eligibility; autism and traumatic brain injuries were added as classification with the 1990 amendment to the Individuals with Disabilities Education Act (Newschaffer, Falb, & Gurney, 2005). Children with autism were possibly considered under the classification areas of mental retardation and speech/language (Newschaffer et al., 2005).

**National Longitudinal Transition Study–2.** A subsequent longitudinal study, National
Longitudinal Transition Study-2 (NLTS2), collected data on students with disabilities in seventh grade and above over a ten-year period beginning with the 2000-01 school year (Newman et al., 2011). The characteristics of students changed markedly between 1987 and 2001 (Wagner et al., 2003).

**Characteristics of students with disabilities.** Students were less likely to be classified in the disability category mental retardation in 2001 (12.6%) than in 1987 (18.7%). The category of other health impairment grew significantly from 1987 (1.1%) to 2001 (5.1%), partially due to an increased number of students with autism and attention deficit disorder (Wagner et al., 2003). The number of students with disabilities who were male stayed within a similar range (68.6% in 1987; 67.4% in 2001), while the number who were African American decreased by 2.8% to 20.7% in 2001. The greatest increase was in students who did not speak English as their first language, with 3.3% in 1987 and 14.2% in 2001 (Wagner et al., 2003).

**Household demographics.** More students with disabilities were likely to be living in a single-parent household in 2001 (37.2%) than in 1987 (35.8%) (Wagner et al., 2003). The education and employment levels of the head of household increased from 1987 to 2001 with an 11.4% increase in full-time employment and an 8.2% increase in parents with some college as well as a 5.2% increase in parents with a bachelor’s degree (Wagner et al., 2003).

**Disability category differences.** The disability categories of deafness and hard of hearing were combined into a single category of hearing impairment and additional categories were created for autism and traumatic brain injury with the 1990 amendment to the IDEA (Wagner et al., 2003). There was an increase in the receipt of support services for students with emotional disturbances primarily due to an increase in mental health services (additional 20.3%) (Wagner et al., 2003).
School completion. The number of students with disabilities who dropped out of school decreased from 1987 (2.9%) to 2001 (1.3%) (Wagner et al., 2003). The dropout rate decreased most significantly for students with mental retardation (3.1% in 1987; .2% in 2001) and remained at a similar level for students with emotional disturbances (4.4% in 1987; 4.2% in 2001) (Wagner et al., 2003).

Employment. Students with disabilities who had been out of high school for up to eight years reported some type of employment (91%), with an average of having held four different jobs (Newman et al., 2011). Young adults with learning disabilities (94.9%), other health impairments (95.5%), and speech and language impairments (94.0%) were most likely to have been employed since leaving high school, while students with multiple disabilities (62.5%) and autism (63.2%) were least likely to have been employed at any time since high school (Newman et al., 2011).

Postsecondary education. Within eight years of leaving high school, 60.1% of students with disabilities reported having ever enrolled in any postsecondary education as compared to 67.4% of students in the general population (Newman et al., 2011). Students with hearing impairments (74.7%) and visual impairments (71.0%) were most likely to enroll in any postsecondary school, while students with mental retardation (28.7%), multiple disabilities (32.8%), and autism (43.9%) were least likely to enroll in postsecondary school (Newman et al., 2011). Students with disabilities (40.7%) were less likely to complete postsecondary education of any type as compared to students in the general population (52.4%) (Newman et al., 2011). Students with orthopedic impairments (34.7%), emotional disturbances (35.1%) and autism (38.8%) were least likely to have completed postsecondary education (Newman et al., 2011).

Household circumstances. Students in the general population are reaching certain
markers of independence, such as financial independence, residential dependence, marriage, and parenthood, later after they leave high school (Furstenberg Jr. et al., 2005). Students with learning disabilities (64.9%) and emotional disturbances (63.1%) were most likely to live independently, while students with multiple disabilities (16.4%) and autism (17.0%) were least likely to live independently (Newman et al., 2011). Students with disabilities were less likely to be married within eight years of finishing high school (13%) than their general education peers (19%) (Newman et al., 2011). Students with emotional disturbances were most likely to have parented a child (39.1%), while students with autism were least likely (3.0%) (Newman et al., 2011).

**Social and community involvement.** Students with a learning disability (82.5%), speech and language impairments (84.4%), and other health impairments (80.0%) were reported as socializing with friends outside of work or school at least weekly, while students with autism (48.2%) and multiple disabilities (52.8%) were less likely to engage in socialization activities (Newman et al., 2011). Students with autism (55.4%) and multiple disabilities (55.0%) were least likely of all students with disabilities to have registered to vote (Newman et al., 2011). Students with emotional disturbances were most likely to have ever had any involvement with the criminal justice system (74.7%), while students with orthopedic impairments (22.8%) and autism (26.7%) were least likely to have had any such involvement (Newman et al., 2011).

**Politics and policy affecting transition programming.** The Individuals with Disabilities Education Act (IDEA; 1990) led to the

- change of the name of the act from the Education of All Handicapped Children Act;
- use of person-first language and the replacement of the word handicap with the
word disability;

- introduction of transition planning as an aspect of IEP development;
- added early intervention programs;
- and added autism and traumatic brain injury as disability classification categories (Clair et al., 2007).

Halpern, who had debated in the academic literature in 1985 that transition goals should not be limited to employment outcomes, was confident that transition included a broad set of dimensions (Halpern, 1985). He stated that the period of transition was “… better defined as ‘a period of floundering’ that occurs for at least the first several years after adolescents leave school and attempt to assume a variety of adult roles in their communities” (Halpern, 1992, p. 2).

As the twenty-first century neared, the importance of transition was certainly at the forefront of educational and political initiatives. Many governmental programs and policies were enacted in the 1990s to support transition programming. The Systems Change in Transition priority was established by the Office for Special Education and Rehabilitation (1991) which offered 5-year grants to states to support the development of transition programs. The Rehabilitation Act Amendment replaced the definition of transition to match that in IDEA (1992). The School-to-Work Opportunities Act (1994) required that all students be included in transition activities. The National Transition Alliance (1996) was funded so as to provide technical assistance to states. The Workforce Investment Act (1998) linked amendments of the Rehabilitation Act to employment services. Finally, the Ticket to Work and Work Incentives Improvement Act (1999) offered incentives to return to work (J. R. Johnson, 2002). The Workforce Investment Act was reauthorized in 2014 (https://www2.ed.gov/about/offices/list/osers/rsa/wioa-reauthorization.html).
Current transition issues for students with disabilities. Students with disabilities face significant challenges in the transition to adulthood as compared to their peers without disabilities (Levine & Wagner, 2005b).

Delays in reaching adulthood. Just as students in the general population are taking more time to reach adulthood, so are students with disabilities (Levine & Wagner, 2005a). Three trends are responsible for the delayed transition to adulthood for all students: additional time spent in education, extended time between leaving the household and establishing a family, and a delay in getting married and having children (Fussell & Furstenberg Jr., 2005). Young adults in the general population are more likely to rely on their families for support during the time of transition to adulthood (Osgood, Foster, et al., 2005a). For students who received special education services during school-age years, the transition to adulthood can be especially challenging (Levine & Wagner, 2005b).

Likelihood of dropping out. An early hurdle is graduation from high school; students with disabilities are more likely to drop out of high school (Levine & Wagner, 2005a). An estimated 29% of special education students leave high school without a diploma (U.S. Department of Education, 2001). Students with disabilities who drop out of high school are less likely to have career-oriented jobs; education is likely to be limited to the completion of a GED (Levine & Wagner, 2005b).

Adversities. It is likely that students with disabilities face more adversities as a young adult than typically developing students as graduation from high school marks the end of entitlement programs such as special education services (Hughes, 2009). The loss of high school special education services has been described as falling off a cliff as students lose comprehensive services and are left without any support (Bagenstos, 2014).
**Eligibility programs.** Support programs for adults with disabilities, such as vocational rehabilitation or supported employment, are considered eligibility programs rather than entitlement programs and may have long waiting lists or may deny services (Bagenstos, 2014). The Americans with Disabilities Act (ADA; 1990) prohibits discrimination against individuals with disabilities and mandates that reasonable accommodations are made for individuals with disabilities to access the same goods and services that are available to the general public (Levine & Wagner, 2005a). However, access to ADA programs such as vocational rehabilitation and independent housing are available on an eligibility basis, not as an entitlement (Bagenstos, 2014). The federal government offers an income supplement program for individuals with disabilities who have little to no income to assist with basic needs such as food, clothing, and shelter. This is an eligibility program funded by general tax revenues (https://www.ssa.gov/ssi/).

**Family support.** Families continue to support young adults as they transition to adulthood by providing material supports, such as housing, time, and money (Schoeni & Ross, 2005). Family support is equally, if not more, important for students with disabilities (Turnbull et al., 2011). Family involvement is a transition practice described extensively in the literature on students with disabilities (D. R. Johnson, Stodden, Emanuel, Luecking, & Mack, 2002; Kohler, 1993; Landmark et al., 2010). Families of students with disabilities are often overly challenged by the disability of a student to have the ability to provide additional support (Levine & Wagner, 2005b).

**Socioeconomic status.** In a study based on data from NLTS2, Wagner, Newman, and Javitz (2014) found that while socioeconomic status had a statistically significant effect on post-high school outcomes, other variables such as disability type, gender, and ethnicity also had an effect on student outcomes. Students in poverty with disabilities were less likely to have a
successful transition to adulthood as the “… detrimental effects of poverty can be devastating” (Levine & Wagner, 2005b, p. 212).

**Self-disclosure.** Students with disabilities differed in whether they considered themselves to have a disability as well as whether they revealed their disability to a postsecondary school. Sixty-three percent of all students with disabilities did not consider themselves to have a disability (p. 31), while 23.9% of students with autism did not consider themselves to have a disability (Newman et al., 2011, p. 40).

**Evidence Reviews of Transition Programs**

Despite a call for rigorous scientific research, few studies published during the 2000s were considered rigorous enough to support many commonly used transition practices (Landmark et al., 2010). Transition became an area of focus for several reauthorizations of the Individuals with Disabilities Education Act (IDEA); however, a significant discrepancy remained between students with disabilities and other students regarding post-high school outcomes (Cobb et al., 2013; Wagner, Newman, Cameto, Garza, & Levine, 2005). Congress attempted to improve academic outcomes with the passage of the No Child Left Behind Act of 2001 (NCLB, 2002) with the requirement that schools use scientifically based research to inform programming decisions. The definition of scientifically based research as stated within the Act was the use of objective, systematic, and rigorous methodology. In 2002, the U.S. Department of Education established the Institution for Education Science (IES) to support the research goals of the Act; in turn, the IES developed the What Works Clearinghouse (WWC) to provide access to scientifically based research (Gersten & Hitchcock, 2009).

A task force established by the Division of Research of the Council for Exceptional Children (CEC) developed quality indicators for four types of research deemed important for
special education: experimental group designs, correlational designs, single subject research, and qualitative designs (Brantlinger et al., 2005; Gersten et al., 2005; Horner et al., 2005; Odom et al., 2005; Thompson, Diamond, McWilliam, Snyder, & Snyder, 2005). The CEC Division of Research considered that research meeting these standards was evidence-based and met the standards established by the NCLB Act. However, the strength of the positivist influence on what was deemed scientifically-based as research could be seen in the Cobb et al. (2013) review of literature on transition of students with disabilities into young adulthood.

**Map of intervention literature.** Alwell and Cobb (2006a) prepared the first systematic literature map of the transition intervention literature under a competitive grant offered by the Office of Special Education Programs. The authors cataloged intervention and outcome constructs, sample and methodological characteristics, and study contexts of transition intervention literature. Between-group, within-subjects, single-participant, and qualitative designs were included in the map. The final literature map included 164 studies which were sorted into six intervention constructs: counseling, transition planning, life skills, vocational skills, and self-determination interventions. Internal validity ratings, external validity ratings, disability groups, study contexts, and an overview of outcomes were provided for each intervention construct. A complete list of studies included in the literature map was not provided. The authors noted that although there was significant variability in the studies under each of the six intervention constructs, there was a basis for conducting intervention-based reviews.

**Experimental evidence review.** Test, Fowler, et al. (2009) conducted a literature review for group or single-subject experimental research in secondary transition. An objective of the study was to provide practitioners with a list of evidence-based practices. The authors identified
32 evidence-based practices based on experimental studies and categorized the results with the Taxonomy for Transition Programming as follows: student-focused planning, student development, interagency collaboration, family involvement, and program structures (Kohler, 1996). Evidence was rated either strong, moderate, or potential based on the quality indicators for experimental research developed by Gersten et al. (2005). A majority of the articles described skills from the Student Development aspect of the Taxonomy. Teaching life skills (Alwell & Cobb, 2006b) and teaching purchasing skills (Xin, Grasso, Dipipi-Hoy, & Jitendra, 2005) both had a strong level of evidence; 22 practices were rated as having a moderate level of evidence while one practice had a potential level of evidence (Test, Fowler, et al., 2009). The Taxonomy category of Student Focused Planning had three practices that were rated as having a moderate level of evidence, Family Involvement had one practice rated as moderate evidence, and Program Structures had two practices rated as moderate and one rated as potential. There were no practices identified in the Interagency Collaboration category. The results were posted on the National Secondary Transition Technical Assistance Center (NSTTAC) website (www.nsttac.org).

**Correlational evidence review.** Test, Mazzotti, et al. (2009) conducted a review of correlational studies regarding skills that may impact postschool outcomes in the education, employment, and/or independent living of students with disabilities. The studies were evaluated by a set of quality indicators developed by Thompson et al. (2005) and were rated as either providing a moderate level of causal inference or a potential level of evidence. Correlation studies were not considered to have a strong level of causal inference. Six predictor categories had a moderate level of evidence in support of an education, employment, or independent living outcome. Inclusion in general education had moderate causal inference for all three outcome
areas, paid employment had moderate causal inference for education and employment, self-care and independent living skills had moderate causal inference for independent living, participation in a transition program had moderate causal inference for education, vocational education had moderate causal inference for education and employment, and work study programs had a moderate causal inference for employment. An additional 10 predictor categories had a potential level of causal evidence: career awareness, community, exit exam requirements, interagency collaboration, occupational courses, parental involvement, specific programs of study, development of self-determination, development of social skills, and student support. The authors concluded that the 16 predictor categories offered practitioners empirical support for programs linked to positive postschool outcomes.

**Scientifically based practices.** What Works Clearinghouse (WWC) is an initiative of the Institute of Education Sciences, a division of the U.S. Department of Education. The goal of WWC is to provide information to educators so as to make evidence-based decisions (Cobb et al., 2013). The gold standard for WWC-supported research is randomized experimental group designs (Odom et al., 2005). The narrow focus of the WWC standards was concerning for educational researchers. Feuer, Towne, and Shavelson (2002) stated that the “… narrow definitions of research or science might trivialize rather than enrich our understanding of education policy and practice, and that the splendors of unfettered scholarship will be eroded by creeping tides of conformity and methodological zealotry” (p. 4). A significant point made by the authors is that methodology should be guided by the research question. Despite concern that the field of education research will be narrowed by the focus of What Works Clearinghouse, it remains a strong indicator of successful education research (Feuer et al., 2002).

Cobb et al. (2013) conducted a review of the literature on strategies, interventions, or
services that were designed to support the transition of students with disabilities into young adulthood. Research designs eligible for the evaluation included randomized control trials, certain quasi-experimental designs, and single-case designs (Cobb et al., 2013, pp. 4-5). A direct measure of post-high school outcomes was required in either employment, postsecondary education, or independent living.

The highest WWC standards rating for group design studies was *meets evidence standards without reservations* in which outcomes were most likely to be an effect of the program (Cobb et al., 2013, p. 7). None of the studies reviewed met this WWC standard. The next rating level for group design studies was *meets evidence standards with reservations*. Studies in this category may have had high attrition rates and/or did not satisfy random assignment requirements; however, the studies did demonstrate that the treatment group and control group were similar prior to the implementation of the program. Three of the 43 studies met this standard.

The highest WWC standards rating for single-case design studies was *meets pilot single-case design standards without reservations* (Cobb et al., 2013, p. 8). To be eligible for this rating, studies must have introduced the intervention at least three times and must have collected outcome data at least five times before ending the program. None of the studies reviewed met this WWC standard. The next rating level for single-subject designs was *meets pilot single-case design standards with reservations*. To meet this standard, the intervention must have been introduced at least three times and the outcome data must have been collected at least three times before ending the program. Sixteen studies satisfied this requirement.

The group design and single-case design results were not considered equivalent as “the pilot SCD standards differ from the standards for group design studies” (Cobb et al., 2013, p. 8).
At least five single-case design studies must have been conducted by three different research groups and must have involved at least 20 participants for the program to be considered as a contribution to the evidence base (Cobb et al., 2013, p. 8).

In summary, no studies met the WWC standards without reservations. There is no research evidence meeting the WWC standards without reservations criteria that supports the use of specific programs to successfully support the academic, employment, or independent living goals of students with disabilities as they enter young adulthood. When asked why studies had not been conducted to the WWC standard, Eric Carter, a widely published professor of Special Education at Vanderbilt University, stated that there had not been sufficient funding to support studies meeting the highest WWC standards (personal communication, November 6, 2015).

**Evidence-based practices, updated.** Mazzotti, Test, and Mustian (2014) updated the work of Test, Fowler, et al. (2009), expanding the number of evidence-based practices from 32 to 64. The authors categorized the practices using Kohler’s (1996) Taxonomy. Six of the practices relate to Student-Focused Planning, 57 practices are in Student Development, 1 practice is in Family Involvement, and 3 practices are in Program Structure. The Taxonomy category of Interagency Collaboration is not represented. A complete list of evidence-based practices for transition is available on the National Technical Assistance Center on Transition website (www.transitionta.org).

**Qualitative studies on transition.** Brantlinger et al. (2005) defined qualitative research as “… a systematic approach to understanding qualities, or the essential nature, of a phenomenon within a particular context” (p. 195). The authors declare that “… qualitative designs do produce science-based evidence that can inform policy and practice in special education” (p. 195) in response to the demands of the NCLB Act (2001).
Lehmann and Davies (2001) conducted a case study of 59 students with disabilities in five states. Garrison-Wade and Lehmann (2009) used data from that study to describe the barriers and supports to a successful transition into postsecondary education from the perspective of the student participants. The authors identified three barriers: the attitudes of educators and peers, lack of preparation for the difficulty of college coursework, and financial constraints. Supports included self-determination and parental support.

Garrison-Wade (2012) also used data from the Lehmann and Davies (2001) study to evaluate the importance of self-determination from the perspective of the students. Three themes emerged from the study: the importance of taking advantage of student self-determination skills, the necessity of intentional planning, and the need to improve support during the postsecondary experience. The author offered recommendations for practice, including encouraging students to take rigorous classes during high school to better prepare for college, and guiding students in the preparation of a transition plan that supports college completion.

Lehmann, Davies, and Laurin (2000) conducted a focus group with 35 postsecondary students with disabilities to discuss barriers, supports, and plans for the future. Barriers included a lack of understanding about disabilities by faculty, staff, and peers; a lack of services in support of academic and nonacademic needs; a lack of financial resources; and a lack of self-advocacy skills. Students had an optimistic vision for their future, particularly if they were able to improve their self-determination skills by increasing their propensity to self-advocate and by engaging in autonomous decision-making. Self-determination was defined by Wehmeyer (1996) as “acting as the primary causal agent in one’s life and making choices and decisions regarding one’s quality of life free from undue external influence or interference” (p. 24).

Dowrick, Anderson, Heyer, and Acosta (2005) conducted focus groups with students
from 10 universities in different geographic areas of the United States. At each site, participants were recruited with a specific disability, ethnicity, or area of study. The purpose of the study was to understand the experiences of students with disabilities in postsecondary education, to discover the supports for students with disabilities, and to discover how well the students were prepared for employment. The authors found that student disability services were a significant support, yet students reported that many disability service centers were understaffed. Postsecondary education led to students feeling more confident and marketable about employment, but the students did not feel directly prepared for specific employment. The students reported that family and peer support was beneficial. Students were also concerned about the effect of stigma of disclosing their disabilities to both faculty and peers. Concern about stigma was also indicated in the NLTS-2 study in regards to self-disclosure about disability in the postsecondary environment (Newman et al., 2011).

Thoma and Getzel (2005) conducted six focus groups with students with disabilities in Virginia. Students were purposefully sampled based on their self-determination skills based on self-disclosure of their disability at some time during their postsecondary experience. The purpose of the study was to understand which skills students with disabilities considered essential to their success in a postsecondary program. Results confirmed the importance of self-determination. Students reported that problem solving, understanding one’s disability, goal setting, and self-management were important in their success in college.

**Overview of evidence-based research on transition.** There are differing perspectives about the caliber of research in the field of transition. By the standards of What Works Clearinghouse (Cobb et al., 2013), there were not any studies that met the highest level of rigor. However, leading scholars in the field of special education have developed standards for
evidence-based research (Brantlinger et al., 2005; Gersten et al., 2005; Horner et al., 2005; Thompson et al., 2005). Based on those standards, scholars in transition have developed an emerging literature base (Mazzotti et al., 2014; Test, Fowler, et al., 2009) to guide both research and practice.

**Community College & Students with Disabilities**

Students with disabilities interested in postsecondary education are most likely to select a community college for attendance (Newman, Wagner, Cameto, Knokey, & Shaver, 2010). Cohen and Brawer (1996) define a community college as “… any institution accredited toward the Associate in Arts or the Associate in Science as its highest degree” (p. 5). In addition to offering two-year degrees, community colleges often offer technical and vocational certification.

On the community college campus, the office for disability services aids students with accessibility and accommodation needs (Cory, 2011). However, the disability services office should not be solely responsible for supporting students with disabilities (Huger, 2011). Community colleges can improve the learning and experiences for all students by having departments work in partnership to create a disability-friendly climate (Huger, 2011).

Quick, Lehmann, and Deniston (2003) reviewed a key community college journal and found that over ten years only six articles of varying quality included research about students with disabilities. An analysis of the articles using a modified constant comparative method resulted in three themes: the importance of campus factors affecting faculty awareness regarding accommodations for students, the consequences of ambiguously labeling disabilities, and the narrow selection of research methodology of the included studies. The authors concluded that there was a gap in the literature regarding staff development, selection and use of accommodations, specific needs of varying disability groups, and self-determination in the
community college setting.

Garrison-Wade and Lehmann (2009) developed a framework (GWL Transition Framework) to guide transition preparation, planning between secondary and postsecondary institutions, and providing accommodations in the community college setting. Success is defined by the authors as a student being enrolled in a degree program with anticipation of the student completing the program. Important issues addressed included instructor awareness, financial support, mentoring, and developing a plan for employment. The authors recommended that community college leaders conduct a needs assessment with their students about the services provided. Communication between the community college and secondary programs was also recommended by participation in a cross-institutional P-16 council. Practitioners in community colleges were encouraged to promote communication between disability coordinators and instructors. Another suggestion was the development of student networks to provide information to the college practitioners.

Oertle and Bragg (2014) reconceptualized the GWL Transition Framework (Garrison-Wade & Lehmann, 2009) to integrate new studies regarding students with disabilities in community colleges. The Transition to Community College (TtCC) model maintained continuous planning as an essential component, but added collaboration, internal communication, and external communication as key aspects of the model. The authors recommended that community colleges use person-centered processes when providing student support, implement universal design principles, ensure that technology to support access is regularly updated, and consider outcomes when conducting planning.

**Autism**

**Definition of autism.** Autism Spectrum Disorder (ASD) is defined in the fifth edition of
the Diagnostic and Statistical Manual (DSM-5) as a developmental disorder characterized by persistent deficits in social communication and social interaction as well as restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013). The DSM-5 definition revised the overarching category of pervasive development disorder and the subtypes of autistic disorder, pervasive development disorder – not otherwise specified, and Asperger’s disorder from DSM-IV into a single category of ASD (Lord & Bishop, 2015). The failure to use verbal language as well as delayed language acquisition were no longer required for an ASD diagnosis and, if applicable, would be considered comorbid disorders (Lord & Bishop, 2015).

Asperger’s Syndrome was added to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) in 1994 (American Psychiatric Association, 1994). A diagnosis of Asperger’s Syndrome required qualitative impairment in social interaction; restricted repetitive and stereotyped patterns of behavior, interests, and activities; clinically significant impairment in social, occupational, or other areas of functioning; and no clinically significant delays in language or cognitive development. Partially because of the difficulty distinguishing between Asperger’s Syndrome and high functioning autism (Hill et al., 2014), Asperger’s Syndrome was removed as a diagnostic subtype with DSM-5, leading to concerns that some individuals who may have formerly been diagnosed with Asperger’s Syndrome would no longer meet the diagnostic criteria for the new category of autism spectrum disorder (McPartland, Reichow, & Volkmar, 2012). However, individuals with diagnosis based on DSM-IV were considered to have a diagnosis of autism with DSM-5 (Smith, Reichow, & Volkmar, 2015).

**IDEA definition of autism.** The Individuals with Disabilities Education Act (2004)
regulated the education of students with disabilities in public institutions (Katsiyannis, Yell, & Bradley, 2001). The purpose of the IDEA definition of autism was to support educational eligibility for students with disabilities, while the DSM-5 definition was to specify a mental health diagnosis; the two systems “interact extensively to serve children with behavioral and/or developmental disorders … [however,] each remains essentially separate, with its own nomenclature, diagnostic criteria, and treatment settings” (Forness & Cantwell, 1982). The IDEA definition of autism was as follows:

Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child’s educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (Individuals with Disabilities Act, 2004).

Each state, however, has its own definition of autism guiding state implementation of IDEA (MacFarlane, 2009).

**Prevalence rate.** Autism was the fastest growing area of eligibility for special education services (U.S. Department of Education, Office of Special Education Programs, 2015). The number of children with autism was estimated as 4 to 5 in 100,000 before 1985 (Yeargin-Allsopp et al., 2003). The most recent estimate presented by the Center for Disease Control was that 1 in 68 children have an autism diagnosis (Center for Disease Control, 2016). This estimate is based on an analysis of children who were eight years old in 2012. Data from the National Health Interview Survey indicate that 1 in 45 children have autism (Zablostsky et al., 2015). A total population study conducted in South Korea estimated the number of children with autism as 1 in
Hill et al. (2014) stated that the prevalence rate could not be directly related to an increase of the incidence rate as “… there is good evidence that changes in diagnostic criteria, diagnostic substitution, changes in the policies for special education, and the increasing availability of services are responsible for the higher prevalence figures (p. 84).

**Early intervention.** Autism was once considered a condition with a poor prognosis, with only 50% of children developing spoken language (Dawson, 1989). Early intensive behavioral intervention has dramatically improved the outcome for many children with autism (Dawson, 2008; Reichow, 2012). In a study begun in 1970 by Lovaas (1987), 47% of the children in the experimental group who had received more than 40 hours of individualized behavioral treatment per week were able to successfully complete first grade in a general education program and scored average to above average on IQ tests. Dawson et al. (2010) conducted a randomized, controlled trial on the Early Start Denver Model, a two-year intensive behavioral intervention for children from 18 months to 30 months old with autism. Results indicated that children in the treatment group showed significant improvements in language, adaptive behavior, and IQ. Intensive early intervention could “alter the abnormal developmental trajectory of young children with ASD and help guide brain and behavioral development back toward a normal pathway” (Dawson, 2008, p. 176).

Shattuck et al. (2012) estimated that 50,000 U.S. students with autism graduated from high school each year. During high school, special education students with autism participated in IDEA legally-mandated individualized transition planning services (Dente & Coles, 2012; Shogren & Plotner, 2012). Despite these programming improvement, the actual measures for post-high school experiences including employment, education, independent living, and socialization were however not satisfactory (Cobb et al., 2013; Newman et al., 2011).
**NLTS2 Results for Autism**

The National Longitudinal Study-2 provided information about students who were 13 to 16 years old and who received special education services in the 2000-01 school year (Newman et al., 2011). Data were collected over a 10-year period as the students entered early adulthood. The sample was considered to be nationally representative and the findings were generalizable to students with disabilities.

Newman et al. (2011) reported on the status of young adults in the NLTS2 study who had finished secondary school and who were 21 to 25 years old. The report provided information in five key domains: postsecondary education, employment, productive engagement, residential independence, and social and community involvement. This report represented the final picture of this group of young adults and considered how their experiences differed by disability category and by demographic groups. Comparisons were made with young adults in the general population as well (Newman et al., 2011).

**Demographics for young adults with autism.** Students with autism represented 0.6% of the sample size in the NLTS2 study (Newman et al., 2011, p. B3). Eighty-six percent of the students with autism were male, 74% were White, and 53.5% had household incomes of more than $50,000 (p. B7).

**Postsecondary education for young adults with autism.** Forty-three percent of students with autism enrolled in any type of postsecondary school as compared to 60.1% of all students with disabilities and 67.4% of all students in the general population (Newman et al., 2011). Students with autism were most likely to enroll in community colleges (44.2%) or vocational/business/technical schools (32.3%) as compared to four-year colleges (18.8%, p. 19). Of the students with autism enrolled in postsecondary education, 72.8% attended full-time (p.
Students with disabilities differed in whether they considered themselves to have a disability as well as whether they revealed their disability to the school. Sixty-three percent of all students with disabilities did not consider themselves to have a disability (p. 31), while 23.9% of students with autism did not consider themselves to have a disability (Newman et al., 2011, p. 40). A greater percentage of students with autism considered themselves to have a disability and informed the school of the disability (62.7%, p. 31) as compared to all students with disabilities (24%, p. 40). Thirteen percent of students with autism considered themselves to have a disability, yet did not inform the school of the disability (p. 40).

Students with autism attending a community college earned an average of 38 credits while students with autism attending four-year college earned an average of 77 credits. Conversely, all students with disabilities attending a community college earned an average of 23 credits while all students with disabilities attending four-year college earned an average of 71 credits (p. 44). Students with disabilities were more likely than peers in the general population to complete community college (41% vs. 22%) and were less likely to complete 4-year college (34% vs. 51%, p. 47). Students with autism had one of the lowest completion rates of postsecondary education (38.8%) of students in any of the 12 IDEA disability categories (Newman et al., 2011).

**Employment for young adults with autism.** Students with disabilities were less likely to be employed for pay (60%) (Newman et al., 2011, p. 53). Students with autism were less likely to be employed (37.2%), although 63.2% reported employment of some type since high school (p. 55). The students with autism held an average of 3.1 different jobs in the eight years after high school; the average duration of each job was 24.7 months (p. 60). The type of
employment for students with autism was most likely to be office and administrative support (19.1%), followed by transportation and package handling (14.6%) and food preparation and serving (12.8%, p. 64). The average number of hours worked per week by individuals with autism was 24.1, the lowest of all of the disability categories, even though 52% of the individuals with autism wanted to work full-time (p. 70). Seventy-three percent of the individuals with autism reported that their employers were aware of their disability; workplace accommodations were received by 37.2% of the individuals with autism (p. 81). The most likely reason for an individual with autism to leave a position was that the position was temporary (p. 93).

**Productive engagement in the community for young adults with autism.** The NLTS2 operationalized productive engagement in the community as employment for pay, including supported employment, education, or job training from someone other than a family member. Young adults with autism were the least likely of all students with disabilities to be productively engaged in the community at any time since leaving high school (70.8%, Newman et al., 2011, p. 106).

**Household circumstances for young adults with autism.** The household circumstances of the NLTS2 report include residential independence, parenting, marital status, and financial independence (Newman et al., 2011). Of all young adults with disabilities, individuals with autism were reported to have a low level of living independently (17%) and were least likely to have had a child (3%) or gotten married (0.9%) (Newman et al., 2011, p. 114).

Young adults with disabilities were less likely to have a checking account (58.7%) than young adults in the general population (73.9%, p. 121). Forty-five percent of young adults with autism reported having a checking account (p. 123). Ninety-one percent of the youth with autism reported an annual income of $25,000 or less (p. 123); students with a higher income
level reflected family incomes.

**Social and community involvement for young adults with autism.** Three dimensions of social and community involvement were considered in this section of the NLTS2 study: friendship, community participation, and violent or illegal behavior (Newman et al., 2011, p. 129). Young adults with autism were the least likely of the students with disabilities to see friends outside of work at least weekly (48.2%, p. 131). Sixty-one percent of the young adults with autism reported taking lessons outside of school, volunteering, or belonging to a community group as compared to youth with other disabilities who ranged from 45.9% (emotional disabilities) to 66.9% (visual impairment and deaf-blindness, p. 136). Students with autism (26.7%) were less likely to be involved in the criminal justice program as compared to students with an emotional disturbance (71.8%, Newman et al., 2011).

**Highlights of NLTS2 data for young adults with autism.** Youth with autism were one of the least likely of the 12 IDEA disability categories to enroll in postsecondary education (Newman et al., 2011). However, once in postsecondary education, they were one of the most likely categories of students to report themselves as having a disability. Young adults with autism worked the lowest average number of hours per week of the disability categories and earned an average hourly rate that was somewhat lower than many of the other categories. Young adults with autism struggled significantly in independent living categories. They were one of the least likely persons with a disability to have a checking account and were the least likely of all the categories to see friends outside of work or school. On a positive note, they were least likely to be involved with the criminal justice system for issues other than traffic violations.

**Scientifically-Based Studies on Autism**

Young adults with autism were the focus of one single-case design study that met WWC
standards with reservations (Cobb et al., 2013, p. 76). Ganz and Sigafos (2005) taught two young adult men with autism and severe intellectual disabilities to use a token system to support self-monitoring during a vocational training program. Results supported the use of self-monitoring to increase independent task completion. Two single-case design studies on transition programs for young adults with autism (Burke, Anderson, Bowen, Howard, & Allen, 2010; Ferguson, Myles, & Hagiwara, 2005) did not meet WWC pilot single-case design standards.

Seminal Review of Students with Autism in Postsecondary Education

Gelbar et al. (2014) conducted a review of literature on the first-hand experiences of students with autism attending postsecondary education. To be included in the review, study participants must have attended a degree-granting college or university, a first-hand experience of one or more participants must have been included, and the article must have been published in a peer-reviewed journal in English. Of the 51 articles on students with autism attending college, 15 articles met the criteria for inclusion. Five additional articles were discovered after a review of the reference lists of the included articles, for a total of 20 articles. This study was the first modern review of students with autism in postsecondary education.

Two of the studies were experimental. The remaining 18 articles were considered case studies (Gelbar et al., 2014). A total of 69 participants were involved in the studies included in the review. Results indicated that students with autism in postsecondary education struggled with loneliness, anxiety, and depression and needed both academic and non-academic support. The two experimental studies were single-subject research designs. Two single-subject research design studies were not considered sufficient to guide effective postsecondary programming (Horner et al., 2005).
Inclusion criteria for this study were as follows: the article provided the experience of a student with autism in a college or university setting, included first-hand experiences of the student, and was published in English (Gelbar et al., 2014). Of the 50 articles screened by the authors and the resulting 20 articles presented in the study, five articles focus directly on the college experience of students with autism and present a level of rigor relevant for this study.

**Studies directly related to students with autism in college.** Madriaga and Goodley (2010) conducted life-history interviews with eight college students with autism. The purpose of the study was to understand the college experiences regarding assessments, learning, and teaching of students with Asperger Syndrome. Results of the grounded theory analysis indicated that there were barriers during lectures, barriers in group work, and concerns regarding assessments. The authors concluded that educators must consider their reactions to differences in students in order to better support students with Asperger’s Syndrome in higher education (Madriaga & Goodley, 2010).

Madriaga (2010), using the same data set as Madriaga and Goodley (2010), considered the negotiation of students with Asperger’s Syndrome in specific university spaces. Sensory difficulties led to certain spaces being troublesome, including the student pub, libraries, and student housing. Segregated areas were not the recommended solution due to concerns with isolation and depression (Madriaga, 2010).

The two experimental studies presented in the review were both single subject research designs (Gelbar et al., 2014). Mason, Rispoli, Ganz, Boles, and Orr (2012) evaluated gains in communication skills in response to video modeling. Results indicated that the two participants with autism were able to increase eye contact and appropriate conversational skills with moderate to large effect sizes. Pugliese and White (2014) conducted a study based on a single
subject research designed to evaluate the use of problem solving therapy for college students with autism. The results for the five participants were inconclusive.

The final study directly related to the experience of students with autism in college was a two-year case study designed to examine the delivery of instruction to students with an autism spectrum disorder in a higher education setting in the United Kingdom (Taylor, 2005). Data were collected from three participants with Asperger’s Syndrome through interviews, discussions, observations, and documentation reviews. A specific data analysis methodology was not presented. The author shared his personal experiences as an instructor for two of the students and discussed concerns with communications, navigating the campus, attending classes, and completing assignments.

In closing, the five articles directly related to the college experiences of students with autism represented in a recent review of the topic are limited regarding research topics, methodology, design, and results (Gelbar et al., 2014). There is a significant gap in the literature related to the postsecondary experiences of students with autism.

Comorbid autism studies in postsecondary education. Two of the studies presented in the Gelbar et al. (2014) review were not uniquely about college students with autism. Connor (2012) conducted a narrative inquiry in which one of the three participants had Asperger’s Syndrome as well as a learning disability, while the other two participants had a learning disability. The student was in college when he realized that he had Asperger’s Syndrome. Results indicated that the student had significant social struggles, particularly with on-campus housing.

Taylor, Baskett, Duffy, and Wren (2008) conducted a two-year case study on higher education in the United Kingdom with three students: two with Asperger’s Syndrome and one
with a mental health disorder. Interviews were conducted with the students and multiple staff members. Observations of the students were also conducted. Results indicated that instructors may need to intentionally handle assignments for group projects, remind students to attend classes, remind students to complete assignments, and cue students as to socially-appropriate classroom behavior.

Additional research subtopics. Gelbar et al. (2014) included six articles in their review regarding college students with autism that did not specifically pertain to their college experience. Connor (2013) considered the effects of the definition and framing of Asperger’s Syndrome through the lens of disability studies. The essay derived theoretical questions related to the differences between definitional labels and individuals. Lee, Duggan, and Schuntermann (1999) presented a case study of a college student with depression and considered the process of differential diagnosis for an individual who may be on the autism spectrum. Jones, Huws, and Beck (2013) conducted an interpretative phenomenological analysis on nine college students on their perceptions on the experience of having autism. While the study was conducted on college students, the college experience was not the focus. A phenomenological analysis was also conducted by MacLeod et al. (2013) who interviewed six students with Asperger’s Syndrome to understand how they made sense of autism as an aspect of their identity. As with the Jones et al. (2013) study, the participants were college students, but aspects of the college experience were not the focus of the study.

Of the 20 articles included in the Gelbar et al. (2014) study, seven did not include a methods section nor was methodology inferred. Three of the seven articles without a methods section were reports about higher education for students with autism and did not provide any unique data collection (Glennon, 2001; Langford-Von Glahn, Zakrajsek, & Pletcher-Rood, 2008;
VanBergeijk, Klin, & Volkmar, 2008). The four remaining studies without a methods section could best be described as essays. Jurecic (2007) discussed her experience as an English teacher teaching writing to a student who may have had Asperger Syndrome. Oda (2010) described his experience tutoring a student with autism in Japanese. MacLeod and Green (2009) described the support of two students with Asperger Syndrome through the lens of the disability service center. Brazier (2013) provided a first-person account as an individual with autism attending Briarcliffe College. While Gelbar et al. (2014) disclosed that “… a liberal definition of case study” had been used for the study, the articles described in this section provide a questionable contribution to the field, supporting the authors’ concern regarding the limited level of research considering the college experiences of students with autism (p. 2599).

Conceptual Framework

A review of the literature on the transition of students with disabilities to adulthood led to the inclusion of self-determination, social capital theory, and disability theory in the conceptual framework. Self-determination was selected because of the importance of self-advocacy in a successful transition to adulthood for students with disabilities (Wehmeyer & Schwartz, 1997). Trainor (2008) posits that social capital is an essential component of the transition of students with disabilities to adulthood. Disability theory considers the impact of social barriers on the experiences of students with disabilities (Shakespeare, 1996) and was included to ensure that there was consideration of the barriers faced by students with autism. Students with autism may insist on sameness and have distress at small changes in schedule (American Psychiatric Association, 2013). The theory of entrainment (Ancona & Chong, 1996) was selected to consider the experiences of students with autism in postsecondary education through the lens of time.
**Social Capital Theory.** Social capital is defined as resources resulting from social relations that provide benefits to individuals (Lin, Cook, & Burt, 2001). Benefits of social capital include the transfer of information and the possibility of influencing decisions of others. Trainor (2008) calls for the consideration of social capital when conducting transition research to better understand the sociocultural factors impacting services for young people with disabilities.

Individuals with greater social capital were able to achieve goals that may not have been possible otherwise (Coleman, 1988). Bourdieu (1986) considered social capital to be how the individuals in the dominating class distributed resources to a select privileged group. In a similar tone, Burt (2001) stated that “… social capital is a metaphor about advantage” (p. 31).

Family support during the primary and secondary years was one of the best ways to develop students with special needs who were successful in postsecondary programs (Turnbull et al., 2011). Strong social ties within the family allowed children to learn the norms and standards of becoming a competent adult (Schneider & Stevenson, 1999). Parents were able to capitalize on the parent-child ties by providing a bridge to resources outside of the family that in turn contributed to the child’s decision making as a young adult (D. H. Kim & Schneider, 2005). Burt (2001) states that social capital was a combination of adult support and the “… parent ability to wrestle resources out of society to support the child” (p. 47).

Social capital may be relevant to students with disabilities in various contexts. The strength of the tie between parent and child may not only provide information for the child, it may also lead to a child more able to gain social capital via other means (Coleman, 1988). Parents may provide bridges to information by means of their own social networks (D. H. Kim & Schneider, 2005). Students with disabilities may or may not be able to learn from the experiences of peers, depending on their ability to build social capital.
Students with disabilities may need more social capital as they move from entitlement programs to eligibility programs (Trainor, 2008). Trainor (2008) described students with disabilities needing to reach out to disability centers and to develop relationships with the service providers. Coleman (1988) described the acquisition of information as being costly. At the very least, gathering information required attention, a scarce resource. The resulting social capital was the “… value of these aspects of social structure to actors as resources that they can use to achieve their interests” (Coleman, 1988, p. S101). A student with a disability may have to use scarce social resources to gain information about eligibility programs, such as the disability center at a postsecondary institution. The ability of professors to support the postsecondary experiences of students with autism may be related to the likelihood that the professor may gain information from peers and/or the disability coordinator regarding situations that may arise during a semester.

Horvat et al. (2003) called for consideration of social capital in qualitative research to provide an understanding of actions and behaviors that generate or use social capital. The authors found that while individuals in families of a low socioeconomic status could gain assistance through their network, such as for childcare or for financial support, the “… resources were both qualitatively and quantitatively distinct from those that were pooled or transferred through middle-class networks” (Horvat et al., 2003, p. 345). They concluded that educational researchers using social capital as a conceptual framework “… specify the nature and social distribution of the resources that are identified by means of this concept” (p. 345). Trainor (2008) called for the consideration of social capital as an aspect of conceptual frameworks specifically for the study of the transition of students with disabilities to adulthood.

**Self-Determination.** Self-determination was considered by Wehmeyer (2014) to be
central to success during the transition to adulthood (Wehmeyer, 2014). Self-determination was defined as a:

- dispositional characteristic manifested as acting as the causal agent in one’s life. Self-determined people (i.e., causal agents) act in service to freely chosen goals. Self-determined actions function to enable a person to be the causal agent in his or her life [emphasis in original] (Shogren et al., 2015, p. 258).

Research indicated that students with greater self-determination as measured with “The Arc’s Self-Determination Scale” were more likely to be successful during the transition period (Wehmeyer & Palmer, 2003), supporting the inclusion of self-determination as an aspect of the conceptual framework of a study on students with disabilities engaged in postsecondary education. Morningstar et al. (2010) found that there was a significant correlation between self-determined behavior and the students’ perceived success in postsecondary environments. Thoma and Getzel (2005) reported that self-determination was considered important by students with disabilities as it related to coursework, obtaining support, and advocating for themselves. Students participating in focus groups coordinated by Garrison-Wade (2012) reported a relationship between self-determination and high expectations held by teachers and family members.

Students in college were expected to advocate for themselves with the disability office regarding accommodations and supports (Turnbull et al., 2011). Students must then inform their professors of the need for accommodations over the course of the semester (McCleary-Jones, 2007). This series of steps necessary for gaining support may have to be taught to students with disabilities (Algozzine, Browder, Karvonen, Test, & Wood, 2001). The process may be even more difficult for students with autism due to struggles with social relationships and
communication, increasing the importance of family support (Field & Hoffman, 1999). Families can support the development of self-determination in their child with a disability by modeling self-determined behavior and by interacting with their child in a way that encourages self-determination (Field & Hoffman, 1999). It is important for families to be cognizant of the impact of the Family Educational Rights and Privacy Act (FERPA) on their ability to intervene regarding postsecondary education of students over the age of 18 (Schulze Jr., 2009).

Self-determination was warranted as a central construct in a study about students with disabilities in postsecondary education (Field, Sarver, & Shaw, 2003). An understanding of the level of self-determination demonstrated by students with autism as they responded to the academic and self-advocacy demands of community college was key to developing a comprehensive representation of the phenomenon.

**Entrainment.** Time is an aspect of all human activity, yet time is underrepresented in social sciences research (McGrath, 1988). Every individual does not respond to time in the same manner. The purpose of this section was to consider the time demands of postsecondary education as they may be experienced by students with autism. Students with autism were likely to demonstrate atypical behavior, such as a strict following of routines; interruption of a routine or schedule could lead to frustration or tantrums by the student with autism (Hyman & Towbin, 2007). Restricted and repetitive patterns of behavior are a characteristic of autism (American Psychiatric Association, 2013). Szatmari et al. (2006) reported that the domain of restricted, repetitive behaviors and interests factored into two dimensions: insistence on sameness and repetitive sensory and motor behaviors. Students with autism who attended a postsecondary institution were presented with an unfamiliar routine and changes in time constraints that may have lead to anxiety (VanBergeijk et al., 2008).
The construct of entrainment has been borrowed from the natural sciences to operationalize time (Ancona & Chong, 1996). Entrainment is defined as “… the adjustment of the pace or cycle of one activity to match or synchronize with that of another” (p. 251). Ancona and Chong (1996) provided academic semester cycles as an example of a dominant macro cycle. The cycle then repeated with each new semester. The speed at which activities occurred within each cycle was called the pace. Over the course of the semester, the pace adjusted depending on the demands of coursework. A rhythm developed as each cycle repeats. Zeitgebers were cues that signaled that a student needed to adapt to various pacers (Ancona & Chong, 1996).

An individual may perceive the temporal structure of an organization from a unique perspective. Blount and Janicik (2001) proposed that individuals have a prevailing temporal agenda (PTA), defined as “… the individual actor’s perception and construal of the organization’s temporal structure from his or her particular vantage point” (p. 570). Extending this construct from employees of an organization to students in a university, it would follow that each student may have his own perception of the temporal structure of the college. Each student’s PTA drives his activities and time management. Jansen and Kristof-Brown (2005) found that individuals in a work group who performed at a pace misaligned with the others in the group were less satisfied and more stressed with the experience. It may follow that students who follow a pace that is out of sync with the expectations of postsecondary programs would be less successful as college students.

A defining characteristic of autism is insistence on sameness and resistance to changes in routine (American Psychiatric Association, 2013). The purpose of the inclusion of entrainment as an aspect of the conceptual framework of this study was to consider time as a construct that impacted the experience of a student with autism participating in postsecondary education.
Disability Theory. Davis (2010) began a discussion about disability studies with an understanding of normalcy. Rather than focusing on disability, he focused on how normalcy was constructed because “… the ‘problem’ was not the person with disabilities; the problem was the way that normalcy was constructed to create the ‘problem’ of the disabled person” (p. 3, emphasis in original). During the time of the industrial revolution, individuals with disabilities were able to make a contribution to farming or small industry concerns despite their disabilities (Finkelstein, 1980). As industrialization developed in the nineteenth century, individuals with disabilities began to be regarded as a problem and were more likely to be segregated. As a labor market developed, individuals with disabilities were considered to be less valuable as human capital. This was the context for the development of the marginalization of individuals with disabilities (Oliver, 1990).

Medical model of disability. The medical model of disability views disability as a deficit in an individual’s body (Siebers, 2008). Medicalization of disability followed the rise of medicine as a profession and the discovery of the germ theory of illness (Oliver, 1990). Oliver stated “… the idea of disability as an individual pathology only becomes possible when we have an idea of individual able-bodiedness, which is itself related to the rise of capitalism and the development of wage labor” (p. 47). An a sociologist with a disability, it was Oliver (1990) who initiated the application of sociological perspectives to disability in the development of a social theory of disability by first seeking to understand why capitalist societies medicalized disability.

Social model of disability. The social model of disability argued that disability was a result of the structure of society and the built environment (Oliver, 1990). From this perspective, the difficulty was not within individuals themselves, but with how society was not designed to accommodate individuals with differences. Disabling environments were the source of
disabilities in bodies and required changes driven by social justice to correct the problems (Siebers, 2008). For example, Szasz (2010) posits that mental illness is a socially constructed myth and considers forced treatment to be a violation of human rights.

Within the social model, Oliver (1990) emphasized the causation of disability in distinguishing between impairment and disability. Impairment was specified as “… lacking part or all of a limb, or having a defective limb, organism or mechanism of the body” while disability was defined as “… the disadvantage or restriction of activity caused by a contemporary social organization which takes no or little account of people who have physical impairments and thus excludes them from the mainstream of social activities” (UPIAS, 1976, p. 14). Based on this definition, the cause of disability was within society (Oliver, 1990).

**Theory of complex embodiment.** Siebers (2008) proposes a third model of disability, the theory of complex embodiment which “… raises awareness of the effects of disabling environments on people’s lived experience of the body, but it emphasizes as well that some factors affecting disability, such as chronic pain, secondary health effects, and aging, derive from the body” (p. 25). Following this theory, disability is valued as a form of human variation (Siebers, 2010). Siebers (2010) states, “in almost every case, however, people with disabilities have a better chance of future happiness and health if they accept their disability as a positive identity and benefit from the knowledge embodied in it” (p. 329).

**Neurodiversity.** A byproduct of disability theory is the concept of neurodiversity. Jaarsma and Welin (2012) describe two parts of what they call the neurodiversity claim: the idea that disorders such as autism are natural variations of the human existence and the idea that neurodiversity is an aspect of civil rights and non-discrimination. Straus (2010) defines neurodiversity as “a belief that autism is not a defect or pathology, but rather an aspect of
naturally occurring and inherently desirable human variability” (p. 542). Autism is not considered a deficit, but is considered “… a distinctive and valuable style of thinking and imagining – a vibrant and interesting way of being in the world” (Straus, 2010, p. 542). Through the lens of neurodiversity, autism was considered as a cultural identification and a source of pride.

**Ableism.** A central belief of disability studies was that environmental and social factors were as much of an influence on disability as were bodily conditions (Adams, Reiss, & Serlin, 2015). The term ability implied the degree to which a life was worth living and implied a judgment call regarding the value of a life in the present or the future. (Campbell, 2015). Society strongly favored the able-bodied, a concept known as ableism. Linton (2010) stated that “… ableism also includes the idea that a person’s abilities or characteristics are determined by disability or that people with disabilities as a group are inferior to non-disabled people” (p. 223, italics in original). Hehir (2005) described ableism as, “… deeply held negative attitudes toward disability that are analogous to racism” (p. 10). In a discussion of a student with a disability attending Harvard, Hehir (2005) stated, “when Joe was applying an admissions officer told him and his mother that the school does not do much ‘hand holding’ for its disabled students” (p. 193). However, Hehir continued that, “all he [Joe, the student at Harvard] and most disabled students want and need is access” (p. 193).

**Universal design.** Universal design is a type of architectural design that is not specifically adapted for individuals with disabilities, it is, however, designed to suit the needs of individuals with varying abilities (Davidson, 2010). In postsecondary education, universal design offered an “integrative approach [which] encapsulates a significant paradigm shift in instruction from making exceptions for ‘different’ learners to anticipation and planning for
student diversity as the norm” (Scott, McGuire, & Shaw, 2003). Examples of universal design for college coursework included providing class notes online for all students, presentation of material in different ways to meet different types of learners, and availability of digital textbooks for all students (Scott et al., 2003).
Chapter 3: Methodology

In this study, I used the qualitative research design of multi-case study to examine how male students with autism experienced the academic, social, and self-advocacy aspects of community college. Creswell (2013) began his definition of qualitative research with an emphasis on the importance of assumptions and theoretical frameworks “… that inform the study of research problems addressing the meaning individuals or groups ascribe to a social or human problem” (p. 44). This study was driven by the following conceptual framework concepts: entrainment, social capital, self-determination, and disability studies. Data were collected at the college or at the home of the student, the voices of the participants were actively sought, and a complex description of the experiences observed was provided. I was a key instrument of this study as I reviewed primary source documents, conducted interviews, and observed college students with autism in a college classroom.

Research Question

Qualitative research is especially well-suited for understanding the meaning of specific experiences through the lens of the participants in a study (Maxwell, 2013). In this study, I sought to understand the college experience of male students with autism from the perspectives of the students, parents, professors, and disability coordinators. The research question for the study was: How do male students with autism experience the academic, social, and self-advocacy needs of postsecondary education from the perspectives of the students themselves, their parents, their professors, their disability coordinators, and their tutors?

Research Design

The research question for this study seeked to understand the experiences of students with autism in the post-secondary setting. My goal was to gain a detailed understanding of their
experiences from multiple perspectives, something that Creswell (2013) stated could be achieved by using qualitative research. He stated that this level of detail “… can only be established by talking directly with people, going to their homes or places of work, and allowing them to tell the stories unencumbered by what we expect to find or what we have read in the literature” (p. 48). In further support, Maxwell (2013) considered qualitative studies to be especially appropriate for “… understanding the meaning, for participants in the study, of the events, situations, experiences, and actions they are involved with or engage in” (p. 30). A multiple case study design was chosen as the intent of the study was to “understand complex social phenomena” (Yin, 2014, p. 4).

**Rationale for Multiple-Case Study Design.** Yin (2014) stated that research questions asking “how” a phenomenon occurs favor the use of a case study as a research method. A case study was defined as “… an empirical inquiry that investigates a contemporary phenomenon (the “case”) in depth and within its real-world context” (Yin, 2014, p. 16). Yin (2014) provided support for the use of multiple case designs as a method of replication which in turn supported the reliability of the findings. The results of a multiple case study were considered more interesting and the study as a whole was seen as being more reliable. Replication was supported by Yin (2014) as follows, “a major insight is to consider multiple cases as one would consider multiple experiments – that is to follow a replication design. Different than following a sampling design. Replication logic is not sampling” (p. 57). Multiple experiments increase the reliability of a quantitative study (Tsang & Kwan, 1999). In a similar manner, multiple cases increase the reliability of a qualitative study.

This study is a multiple-case study of three male college students with autism. Students were purposefully selected for the study so that each case would be similar enough to the other
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participants to be considered a replication of the other two cases (Maxwell, 2013; Yin, 2014). Following Yin (2014), each case was considered as a complete study and “... each case’s conclusions are then considered to be the information needing replication by other individual cases” (p. 59). The number of case replications was not guided by a power analysis. Yin (2014) stated that, “you should think of the number of case replications – both literal and theoretical – that you need or would like to have in your study” (p. 61). For studies that have a straightforward theory and do not require more than a typical level of certainty, Yin (2014) suggested two or three cases. The decision to have three cases followed Yin’s (2014) guidance on the number of replications necessary.

Research Participants

The primary research participants were three male college students with autism comprising the three cases. Additional participants included a parent and a professor for each student, as well as the university disability coordinator who supported each student. One student also had a tutor. A total of eleven individuals participated in the study as each case consisted of a student and a constellation of support for the student.

The location of the study was a large urban city that contained a community college and a private university. The community college setting was selected as it is the most likely higher education institution for students with autism to attend (Newman et al., 2010). However, difficulty recruiting the planned number of participants led to the expansion of the study to a second university setting, a private Catholic university. Two students in the study attended a community college and one student attended a private university.

Purposeful sampling was the participant selection strategy (Maxwell, 2013). Male students with autism were specifically selected as there is a difference in presentation of autism
between males and females (Dworzynski, Ronald, Bolton, & Happé, 2012). The current definition of autism as presented in the fifth edition of the Diagnostic and Statistical Manual Mental Disorders (DSM-5) considered autism to be a spectrum disorder that includes Asperger’s syndrome (American Psychiatric Association, 2013). Following the DSM-5, students with previous diagnoses of autism and Asperger’s Syndrome were considered to be students with autism for the purposes of this study. The sampling criteria was that the student with autism was up to four years out of high school, had a previous diagnosis of autism or Asperger’s Syndrome, and had an average- to above-average intelligence as evidenced by ACT scores.

One participant was recruited through the community college disability coordinator as a gatekeeper. The disability coordinator distributed a letter briefly describing the study and suggesting that the student share his contact information with me via e-mail or by text message. The disability coordinator sent the letter out to students who had registered with the disability office for support for autism. For privacy reasons, the disability coordinators were not able to share contact information directly with me; the students had to initiate contact if they were interested in participating in the study. This process led to the recruitment of one participant in April of 2016.

The second and third participants in the study were recruited through gatekeepers who were personal friends of mine. The second participant is the son of a work colleague of mine who attended the same community college as the first participant. The third participant is a former classmate of my son.

**Demographic Information.** All three participants in the study were male and lived at home. Jimmy and Danny graduated from high school in 2014; Victor graduated in 2012. While

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1 All names are pseudonyms to protect the privacy of the participants.
in high school, Jimmy received special education services under the category of autism, Victor received services under the category of emotional and behavior disorders, and Danny attended a Catholic high school and was provided accommodations for his disability. Jimmy and Victor had a diagnosis of autism, while Danny had a previous diagnosis of Asperger’s Disorder.

**Participant Profiles**

**Jimmy.** Jimmy was a 20-year-old male student with autism. He was in the second year of community college in a small city in the Midwest. He was working on an associate’s degree in communication. He hoped to ultimately get a bachelor’s degree in communication. He would have liked to work as a sports broadcaster calling football games. Jimmy was well-regarded on the university campus. The year prior to the study, he was chosen by the faculty of the community college as the student of the year. He also received an academic award for having all As and Bs. Jimmy planned to continue living at home after he finished his associate’s degree, although possible plans for the future included finishing a bachelor’s degree at a state university.

Jimmy graduated from high school in 2014. During high school, he participated in all general education courses. While he had special education support, it was mostly within the general education classroom, although he did have a resource class for study skills. During his senior year, he did his senior project with the sports broadcaster who covers the local high school football team.

Jimmy scored a 17 the first time he took the ACT and an 18 on the second attempt. He was admitted to the community college based on his scores on the ACT Compass.

Jimmy was diagnosed with autism at the age of two. During the time of the study, he received weekly occupational therapy sessions. He had a comorbid diagnosis of Obsessive Compulsive Disorder (OCD), which became a significant concern at about the mid-point of high
school. He took medicine for the OCD. His OCD manifested itself in repetitive activities, such as checking that he had packed all of his belongings three to five times and ensuring that he had zipped his backpack three to four times. He also struggled with sitting down once he had arrived in the classroom, as well as with leaving the classroom at the end of class.

Jimmy lived with his family in a moderately-sized city in the Midwest. His father was a legislative analyst and his mother was a full-time parent. Both parents had master’s degrees. His sister was a freshman in college and lived away from home. The family was financially stable and able to pay for Jimmy’s college tuition, as well as that of his sister, without any government assistance. Jimmy did get a small amount of state-sponsored scholarship money, which his mom placed in an account for him so he could learn basic financial management. Jimmy has never had a job.

Jimmy followed the family tradition of being a sports enthusiast. His favorite sport was football. After sports, his favorite recreational activity was eating at restaurants. Jimmy enjoyed listening to music on his digital music player and he also enjoyed vacations with his family.

At home, Jimmy depended significantly on his parents for support with meals and self-care. While he used to get his own snacks, an increase in his Obsessive Compulsive Disorder (OCD) symptoms during his sophomore year of high school led to the loss of that ability. While he discussed driving a bit when he was younger, he did not drive at the time of the study and did not seem interested in learning to drive. His mom drove him to school as well as to his occupational therapy appointments.

Jimmy was an engaging young man. He often used echolalic speech. His mother stated that he tended to try to answer a question with the response the speaker wanted to hear, as he liked to make those around him happy.
Danny. Danny was a 20-year-old student with autism in his second year of college at a private university in the Midwest. He was working on a bachelor’s degree in communication and was interested in working in radio when he graduated. Danny graduated from a private Catholic high school where he received some accommodations for his disability, such as extended time. He did not have an IEP under IDEA, nor did he have the support of a special education teacher while he was in high school. According to his mother, Danny scored either a 23 or a 24 on his ACT, which he took with extended time and in two separate sessions to accommodate for his disability.

Danny was diagnosed with autism at the age of two, although his high functioning status led his mother to question his diagnosis at times. He had comorbid diagnoses of anxiety and depression.

Danny was a respectful young man who was well-mannered. He liked to pace while engaging in conversations. Danny had an excellent vocabulary and clearly expressed himself verbally, although at times his thoughts tended to ramble.

Danny lived at home with his mother, who was divorced, and his 12-year-old twin brothers. He did not consider living on campus. Danny had significant grants from the university; however, he also had to take out student loans to pay for school. His mother made a contribution to his education, but she struggled financially to make ends meet. Danny’s dad paid for some of his expenses. Danny worked part-time at a pizza restaurant to contribute to his own support, a job he held for a year previous to the study.

Danny spent most of his free time at home in his bedroom on the internet chatting with friends from around the world. They sometimes watched videos of other people playing video games and commenting on them; at other times they played video games. He was planning to
meet one of his online friends (in person for the first time) at a music and gaming festival in Virginia in January of 2017, but was getting some pushback from his parents about traveling so far away on his own and although he was saving money for the trip, it was unlikely that he would save enough to attend without his parents’ support.

Danny did have a driving permit, but did not yet drive. He generally traveled to and from school on the public bus. At times, especially when he finished classes at 8:00 p.m., he got a ride from a parent. He walked to and from work, even when he got off work at midnight. Danny’s mom made meals at home for his siblings, but he generally ate something when he was out of the house. His mom paid for a meal plan on campus, but he did not use it. He regularly helped himself to a snack in the kitchen. His mother stated that his room was a mess with layers of dust and trash from snacks and fast food. He did not regularly change the linens on his bed. Periodically, his mother would clean his room thoroughly; however, as a single parent, her responsibilities kept her from doing this as often as she might if she did not have a full-time job.

Victor. Victor was a 23-year-old student in his fourth year at a local community college. He changed paths several times, and was currently completing an associate’s degree in business. He was not certain what he would do upon graduation, but was thinking about developing a business breeding small exotic pets with his brother.

Victor was diagnosed with Asperger’s Disorder at the end of fourth grade. He had a comorbid diagnoses of a Generalized Anxiety Disorder and Obsessive Compulsive Disorder. He went to a public high school and received special education services under the eligibility category of an Emotional and Behavioral Disorder, as the school district considered his communication skills to be too advanced to qualify for services under the eligibility category of Autism. Despite having a disability, Victor was academically gifted, leading to conflict
regarding the ability to receive special education services while taking advanced level coursework. Near the end of middle school, school administrators were recommending that Victor either be homeschooled or participate in online schooling as they did not think that he would be able to make it through high school. However, with the support of an outside autism specialist, Victor went to an engineering magnet program where there were several other students with Asperger’s Syndrome and the classes were small and interesting to Victor. He rode a special education bus to school because the stress of riding on a general education bus would lead to him not being able to participate in the school day.

According to his mother, Victor scored either a 25 or a 27 on the ACT. Victor attended classes at the community college on campus for the first couple of years. However, he now had a job working nights for a local package shipping company and appreciated the flexibility that online courses offered. He was taking two online courses during the semester of the study.

Victor was a personable young man with a twinkle in his eye. He lived at home with his mother, father, and 16-year-old brother. His mother had extensive advanced education, including a law degree and a master’s degree in special education. She worked as a special education teacher for a public elementary school. His father worked for a package delivery company and had struggled with an injury leading to reduced work hours and subsequently to reduced pay.

Because of his father’s reduced work schedule, combined with the fact that Victor is following a rather erratic path through an associate’s degree, his family no longer paid for his college tuition. Victor worked for the same package delivery company that his dad did; fortunately the company reimbursed employees for tuition if the grade for a course was at least a “C.”
Victor worked an overnight shift, generally leaving for work at 3:00 a.m. He worked until between 7:30 a.m. and 8:30 a.m., slept most of the day, and woke up around 4:00 p.m. to eat, do homework, and engage in recreational activities. His schedule allowed him to sleep when his family was at work and school, and to be awake while they were home in the evenings. He completed his coursework and assessments at night before going to work.

**Researcher as an Instrument**

In qualitative research, the researcher is a key instrument in data collection (Creswell, 2013). I developed the interview questions, conducted the interviews, conducted the observations, and evaluated documentation. I had multiple roles that influenced my position as a key instrument in the data collection for this study. Specifically, I will discuss my roles as a special education teacher; as a student of special education research, and as a parent of three children engaged in post-secondary education, one of whom was diagnosed with autism at the age of two.

**Special Education Teacher.** I was in my seventh year as a special education teacher in an elementary school in a large urban school district. I worked primarily with intermediate level elementary students who had high incidence disabilities such as ADHD, specific learning disorders, and behavior disorders. There were two students on my caseload who had an eligibility for special education services in the category of autism. My time was divided between teaching resource groups in the special education classroom and co-teaching in the general education classroom. This schedule gave me the opportunity to regularly observe the students on my caseload in their natural classroom setting.

My philosophy of education is strongly grounded in the work of Vygotsky and the zone of proximal development (Vygotsky, 1978). Following Vygotsky, I believe that children must
be challenged at a level that is between their level of development and their level of capability of learning with a teacher, called the *zone of proximal development*. There is significant pressure in our current high stakes testing environment to ensure that students with disabilities are provided access to the general education curriculum (Hudson, Browder, & Wakeman, 2013). However, my concern is when students are instructed in grade-level content that is out of the zone of proximal development, not only will the student likely learn little, he or she will also develop secondary behaviors such as learned helplessness in response to being placed in an overly challenging situation.

**Special Education Doctoral Student.** Over the past four years, I have engaged in doctoral coursework that has prepared me to engage in special education research. Two studies have warranted Institutional Review Board approval and resulted in conference presentations. In the first, I conducted interviews and reviewed documentation in an examination of special education practices in the United Kingdom. In the second study, I worked with two colleagues to interview nine parents of students with special education needs regarding their transition experiences. Each study gave me the opportunity to develop interview questions, analyze data, and present results at a conference.

**Parent of Students in College.** I have three children, two of whom are college students. My youngest is a freshman at an Ivy League college away from home. My oldest who was registered at a state college close to home dropped out of college during the study. My middle child’s experiences best paralleled that of the students in my study. He was diagnosed with autism at the age of two and has made outstanding progress, to the point that in the seventh grade he no longer qualified for special education services as a student with autism. He did continue to be eligible for services under the category of Specific Learning Disability. He continued to
receive accommodations for his disability as a student in a community college setting.

I regularly reflected on my experiences as a parent as the experiences relate to my theoretical framework and emerging findings. I was also able to contrast my experiences as a parent with a child in a community college with those of a parent with a child in an Ivy League college, leading to some insightful observations regarding levels of self-determination expected at each type of institution.

I have developed an extensive network of parents who also have young adult children with autism. This group of peers was firmly embedded in my social media accounts and I regularly perused the topics shared in those venues.

My personal experiences and connections have allowed me to have an insight into the phenomena that I am studying that others may not have. However, it also allowed for a greater chance of bias. To protect from bias, I regularly wrote my thoughts in an analytic journal. Journal writing allowed me to reflect on the phenomena and to facilitate critical thought as I distinguished findings that emerged from the study with my personal experiences.

**Objectivity and Bias**

A concern for qualitative research is that a researcher will simply find the results that she anticipates she will find. Bryant (2004) asks, “… how does a researcher guard against finding only those answers that he or she wishes to find?” (p. 107). In answer to Bryant’s question, I guarded against this phenomena primarily by allowing the findings to emerge from the data through coding and analytic memo writing. As each code emerged, it triggered a thought that was written in an analytic journal and further reflected upon in writing. While writing analytic journal entries, findings emerged as I wrote and further reflected on the resulting prose.

I was the mother of a student who had a diagnosis of autism and who was attending a
community college. I was living day-to-day the experiences that I was also seeking to understand with this study. This led to an inherent source of bias that could not be completely eliminated. I entered the study with an assumption that students with autism would require the significant support of a parent, most likely a mother, to be successful in college, as I consider my support to be the driving factor for my son’s engagement in college, particularly regarding logistical details such as applying for college, registering for classes, and securing financial aid. The decision to write a dissertation on this topic was driven by an experience with my son when he shared with me his class schedule for his first semester in the community college, yet could not read the title of one of his classes. The experiences of the students in my studies paralleled my own experiences as a parent.

I took multiple steps to reduce the bias of my personal experiences. First, I regularly wrote analytic journal entries about my experiences with my son and reflected on those experiences in writing. These entries did not become an aspect of the study, but they did allow me to put in writing the thoughts that I was having about my own child and my experiences parenting a child with autism in college to distinguish them from the experiences of the participants in the study. Second, I was loyal to the process of inductive analysis by allowing the findings to emerge from the data through memo writing as I engaged in the coding process. I was intentional about recognizing that the findings were emerging from the data. I read through the entire data corpus line by line in completing the first cycle coding leading to the early analytic memos being driven by the raw data. Third, the triangulation of data and the repeated interviews with each participant increased the likelihood that a finding was supported in the data and increased the validity of the study. Fourth, I received feedback from a dissertation committee member that brought my attention to considerations of bias to which I was not able to
notice independently. I intentionally considered her feedback and adjusted my process as necessary. Her comments were on occasion recorded and transcribed so that I could reflect on her feedback in a comprehensive manner.

**Reflective Journal.** A reflective journal was kept during the duration of the study, from concept development to the conclusion of the study. My personal experiences were significant as my son was a college student with autism experiencing the social, academic, and self-advocacy aspects of post-secondary education during the entire study. I regularly related my day-to-day experiences with my son to theoretical concepts that guided the study. Charmaz (2004) states that “… to understand what living in this world means, we need to learn from the inside” (p. 980). My experiences with my son as he navigated college provided me with an understanding of the phenomena from an insider’s perspective. However, Charmaz (2008) also states that “… objectivity is a questionable goal, and what researchers define as objective still reflects partial knowledge and particular perspectives, priorities, and positions. Subjectivities are embedded in data analysis, as well as in data collection” (p. 402). I realized that my role as the parent of a child with autism attending college may bias my perspective as a researcher studying the phenomena in others. To manage the potential bias, I shared my emerging findings with a professor who was able to point out areas of potential bias. I also shared my research regularly with a peer who was also engaged in dissertation research. I discussed the research findings with the peer as they emerged from the data, supporting that the findings were minimally impacted by my personal bias. As I engaged in the analysis process, I intentionally journaled about emerging findings to ensure that findings actually emerged from the writing rather than from simply my personal experiences and perspectives.
Research Site

The research question of the study asked about the experiences of students with autism who were attending post-secondary education, so the context of the study was the post-secondary institution. Specifically, one student attended an extension campus of the community college, one student was enrolled in online classes through the same community college, and one student attended a private university.

While each location was an institution for postsecondary education, there were significant differences in each setting. The extension campus of the community college was housed in one building on a large property in a mid-sized city in the Midwest. Students typically drove to class and parked in the large free lot adjacent to the building. There was a common area just through the entry doors of the building; there was also a small library. The building had the feel of a small high school. The private university was set on a large campus in a large Midwestern city. Many students resided on campus, while others either drove or took public transportation to the university. Parking was by permit only. The third location varied depending on where students completed their online coursework. The student in my study completed his online coursework in his home in the same large Midwestern city where the community college and the private university were, where he resided with his brother and his parents. All three students lived at home while completing their studies.

Data Collection

Yin (2014) considered multiple-case studies to be similar to the replication design of experiments. He stated, “… a major insight is to consider multiple cases as one would consider multiple experiments – that is to follow a ‘replication’ design” (p. 75, emphasis in original). If the results of the replications turned out as hypothesized, then there was “… compelling support
for the initial set of propositions” (p. 75). Alternatively, if the cases did not support the initial propositions, then the conceptual framework may have needed to be revised. This process was repeated following each case of the multiple-case study.

The use of multiple sources of evidence was a key principle of data collection presented by Yin (2014). He stated, “a major strength of case study data collection is the opportunity to use many different sources of evidence” (p. 119). The most significant reason for the triangulation of data in a multiple-case study was that the results would be more accurate if the study used multiple sources of data. Yin stated, “… data triangulation helps to strengthen the construct validity of your case study” (p. 121). By providing multiple sources of evidence, the construct validity of the study was enhanced.

Triangulation in this study was achieved by using semi-structured interviews, observations, and document analysis. Interviews were conducted with the student, a parent, a professor, and a disability coordinator for each student on multiple occasions over the course of a single college semester. The repeated interviews allowed for confirmation of data over time. An interview was also conducted with the tutor of one of the students. Data were collected over the course of a semester so that a student’s response to changes in the pace and rhythm of a semester could be captured. The total amount of time spent in the field was 30 hours and 10 minutes.

**Interviews.** The most significant amount of data were collected through interviews. Each student was interviewed four times during the course of a single college semester to gain an understanding of how the student responded to the varying pace and pressure of the semester. A parent of each student was interviewed on the same schedule. A professor of each student who attended on-campus classes was interviewed on two occasions, once at the beginning of the semester and once near the end of the semester. A limitation of the study is the lack of
participation by Victor’s online professors. Despite multiple attempts to gain access, the professors refused to participate, citing student privacy issues. The disability coordinators supporting the students (one at the community college and one at a private university) were each interviewed on two occasions during the semester. An interview with Danny’s tutor replaced the fifth interview with his mother. Table 1 presents the date and duration of each interview.

Table 1: Interview Schedule and Duration

<table>
<thead>
<tr>
<th>Case</th>
<th>First Interview</th>
<th>Second Interview</th>
<th>Third Interview</th>
<th>Fourth Interview</th>
<th>Fifth Interview</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1: Jimmy &amp; Mom</td>
<td>08/17/16 (1:31)</td>
<td>09/14/16 (1:04)</td>
<td>10/12/16 (0:48)</td>
<td>11/16/16 (1:12)</td>
<td>12/07/16 (1:05)</td>
<td>5:20</td>
</tr>
<tr>
<td>Case 2: Danny &amp; Mom</td>
<td>09/24/16 (1:55)</td>
<td>10/15/16 (0:44)</td>
<td>11/19/16 (1:10)</td>
<td>12/17/16 (1:57)</td>
<td>01/15/17 (0:40)b</td>
<td>6:26</td>
</tr>
<tr>
<td>Case 3: Victor &amp; Mom</td>
<td>09/17/16 (1:31)</td>
<td>10/08/16 (0:53)</td>
<td>11/12/16 (1:25)</td>
<td>12/10/16 (1:20)</td>
<td>02/04/17 (0:50)</td>
<td>4:59</td>
</tr>
<tr>
<td>Case 1: Professor</td>
<td>09/14/16 (0:18)</td>
<td>10/12/16 (0:07)</td>
<td>11/16/16 (0:08)</td>
<td></td>
<td></td>
<td>0:33</td>
</tr>
<tr>
<td>Case 2: Professor</td>
<td>10/13/16 (0:07)</td>
<td>E-maila</td>
<td>01/18/17 (0:07)</td>
<td></td>
<td></td>
<td>0:14</td>
</tr>
<tr>
<td>CC Disability Coordinator</td>
<td>08/24/16 (0:59)</td>
<td>11/23/16 (1:13)</td>
<td></td>
<td></td>
<td></td>
<td>2:12</td>
</tr>
<tr>
<td>CU Disability Coordinator</td>
<td>10/13/16 (0:37)</td>
<td>12/01/16 (0:43)</td>
<td></td>
<td></td>
<td></td>
<td>1:20</td>
</tr>
</tbody>
</table>

Note: CC = Community College; CU = Catholic University. Case 3 professors declined to participate.
a Second interview for Case 2 professor was by e-mail. bThe fifth interview with Danny and his mom was replaced with an interview with Danny’s tutor.

Interviews followed a semi-structured interview schedule. The interviews for each student and parent followed the same protocol (Appendix A), as did the interviews for the professors (Appendix B) and the disability coordinators (Appendix C). There was one tutor who
was interviewed (Appendix D). Supporting replication logic, each participant was asked similar questions on each of the interviews in sequence. A subset of the interview questions (as noted in the appendices) was asked during each of the monthly interviews so as to evaluate a student’s response over time and to understand responses to different levels of academic pressure during the semester. Interviews were digitally recorded and were personally transcribed. Participant confidentiality was protected by giving each participant a pseudonym and using that pseudonym throughout.

Specific interview times per session are listed in Table 1. The number of hours of interviews associated with each student are as follows: Jimmy, 6 hours and 13 minutes; Danny, 6 hours and 37 minutes; and Victor, 5 hours and 59 minutes. The disability director from the community college was interviewed for a total of 2 hours and 12 minutes, while the disability director from the private university was interviewed for 1 hour and 20 minutes.

The selection of interviews as a method of data collection was made to ensure that I had the voice of the student with autism as well as the voice of other stakeholders vested in a student with autism’s experience in postsecondary education. As a special education teacher, I knew that the perspective of my students was likely to be different than my perspective as a teacher, but both perspectives were necessary to fully understand a phenomena. I interviewed each student on five occasions during the semester, with the exception of Danny who was only interviewed four times. On most of the occasions, the parent was present during the student interviews and the student was present during the parent interviews, allowing me to capture the relationship between the parent and the child as well as to have further clarification if the other party felt that there was additional information to add to specific discussion points. Interviews were conducted with the professors and the disability coordinators without the student present.
The conceptual framework and research question guided the development of interview questions. Charmaz (2004) stated that the “… frames we give our research problems shape what we can look for and what we see – as well as what we do not look for or see” (p. 983). The specific lenses of entrainment, self-determination, social capital, and disability studies guided the formation of the interview protocol.

**Entrainment.** The theory of entrainment considered how time impacted human activity (McGrath, 1988). Interview questions were crafted to understand how the student with autism responded to time pressures and demands. Students were asked to describe a typical day on each of the monthly interviews to monitor their perspective of time demands. Parents were asked how their student was managing the routine of going to college and how he was handling the pressure. Parents and professors were asked how the students handled changes in intensity of requirements during the course of each semester.

**Self-determination.** Each student was asked a series of questions from the ARC’s Self-Determination Scale (Wehmeyer & Keichner, 1995) during the third student interview. Specifically, questions were asked regarding independence, acting on preferences, and psychological empowerment. Additionally, students were asked about problems they may have experienced and how they were solved in an attempt to understand any self-determining behavior.

**Social capital.** Students were asked who supported them as they applied to and registered for college, as well as who helped them when they had problems in an attempt to understand support that they may have received that emanated from social capital. Professors were asked about how they learned about ways to support the student with autism. The disability coordinators were asked to describe the level of support that they provided to students, parents,
and professors.

**Disability theory.** The impact of disability theory on the students in the study was investigated by considering barriers that the students may face. Parents, professors, and disability coordinators were asked to describe any barriers that they could think of for students with autism attending college. Barriers were explored with students when considering participation in group projects, support from professors and the disability coordinator, and consideration of problems he experienced.

**Observations.** Each student who attended on-campus classes was observed during a class on two occasions during the semester. I observed Jimmy three times, but then realized that I had reached a saturation of data after the second observation. I sat in the back of the classroom and observed the student’s behavior during the class session. Detailed notes were written regarding the student’s behavior and interaction during the class as I observed the student. Following each observation, I wrote and reflected about the experience. Charmaz (2004) states that “…what happens in a setting may be more telling than what people say about it – particularly publicly” (p. 982). I used observations to gain insight into student behavior and engagement in the classroom. The observations were beneficial to understanding the experiences of the students, especially as I considered those experiences through my lens as a special education teacher. Table 2 presents the date and duration of each interview. I observed the students attending on-campus classes near the beginning of the semester as well as on another occasion later in the semester. After observing Jimmy on a third occasion, I realized that two observations were sufficient to have an understanding of the student’s experience, so I adjusted the number of observations for subsequent cases. I observed Victor at home engaging in his online class on two occasions during the Spring 2017 semester.
Table 2: Observation Schedule and Duration

<table>
<thead>
<tr>
<th>Case</th>
<th>First Observation</th>
<th>Second Observation</th>
<th>Third Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jimmy</td>
<td>09/14/16 (1:10)</td>
<td>10/12/16 (1:25)</td>
<td>11/16/16 (1:15)*</td>
</tr>
<tr>
<td>Danny</td>
<td>10/11/16 (1:10)</td>
<td>11/15/16 (1:25)</td>
<td></td>
</tr>
<tr>
<td>Victor</td>
<td>02/04/17 (1:05)</td>
<td>02/11/17 (0:55)</td>
<td></td>
</tr>
</tbody>
</table>

Note: *After analyzing the data for Case 1, a decision was made to conduct two observations for the next two cases as saturation of data was reached prior to the third observation.

**Document Analysis.** Accommodation documentation was collected from each student to support analysis, such as accommodation letters, and other support documentation provided by the disability coordinators. For each student, I collected the syllabi for each course in which he was enrolled for the semester. I also received the accommodation letter from each student’s respective disability coordinator. In addition, the disability coordinator from the community college shared some support documentation that she generally provided to students who received services from the disability center. The purpose of the document analysis was to gain an understanding of the time demands of each student’s courses and to reflect on the relationship between times of greater pressure, due to assignments or assessments, and the interview transcripts for the corresponding time frame. The accommodation letters supported the information that was shared during the interviews. Of note was that Victor did not have an accommodation letter for this school year. Additional documentation shared by the disability coordinators provided an understanding of the context within which students with autism attend postsecondary education.

**Data Analysis**

Maxwell (2013) considered data analysis to be what you do with the data you have
collected to make sense of it. He stated that one should begin “data analysis immediately after finishing the first interview or observation” (Maxwell, 2013, p. 104). Following Maxwell, I wrote memos during the entire time that I collected data. Yin (2014) stated that a general analytic strategy should “… follow some cycle (or repeated cycles) involving your original research questions, the data, your defensible handling and interpretation of the data, and your ability to state some findings and draw some conclusions” (p. 136). My analytic strategy was guided by the research question as well as the conceptual framework. I followed the recommendations of key authors in the manipulation and analysis of the data (Miles, Huberman, & Saldaña, 2014; Saldaña, 2016; Yin, 2014). Upon conclusion of the analysis, I was able to draw conclusions and state findings.

Data analysis was conducted for each case independently and completely prior to analyzing the next case (See Figure 1). First, data matrices were created and an initial list of inductive codes was created. That was followed by first cycle coding, word analysis to reduce the data, and second cycle coding. The process was then repeated for each case. Cross case analysis followed.

**Pre-Coding.** Prior to coding, I developed a list of deductive codes based on the conceptual framework (Miles et al., 2014). The deductive code list contained ten codes that were directly drawn from each aspect of the conceptual framework. Deductive codes were developed to ensure that the conceptual framework guided the initial coding process. Codes for entrainment included *pace, rhythm, cycles, time, synchronization, and zeitgeber*. The goal was to capture the effect of time and time changes on the experiences of the students over the course of the semester. The code for disability theory was *barriers* to understand any barriers that the students may be facing. For social capital, the codes were *relationships* and *support* with a goal
of understanding the support structure for each student. The code for self-determination was *self-advocacy* so as to understand when a student may have engaged in autonomous decision making.

**Data Matrices.** The first reduction of data I completed for each case was to create a data matrix listing the interview questions and answers that were repeated over the course of the study. Yin considered the use of a matrix as one way to “play with your data” to search for potential “patterns, insights, or concepts” (Yin, 2014, p. 135) The matrices contained all of the questions that were repeated over the course of the study and listed the answers to those questions from the interview transcripts by month. The purpose of the matrix creation and analysis was to explore the data across the study by student to derive inductive codes and prepare
for first cycle coding. The intent was to explore core interview questions for the student and
parent prior to coding the entire corpus of interview data for each student.

A data matrix was completed for each student and for his parent. During the pre-coding
phase of data analysis, data matrices were evaluated, leading to early inductive codes and
analytic memo writing (Figure 1). The entire coding process was completed for Jimmy’s case
prior to developing the data matrix for Danny’s case. In a similar manner, the entire coding
process was completed for Danny’s case prior to developing the data matrix for Victor’s case.
Analysis and coding of the data matrices led to inductive codes as well as the decision to use
Versus Codes (Saldaña, 2016). The discovery of sources of tension within the data matrices was
the catalyst for that decision.

**Member checking.** Data matrices were sent to the participants to ensure that the data
accurately reflected the experience of the student with autism. The purpose for member
checking was to ensure that the data as presented in a matrix truly represented how the members
perceived their experiences. Each of the three families confirmed that the data accurately
reflected the student’s experiences.

**First Cycle Coding.** I began first cycle coding using the following coding methods: In
Vivo Coding, Descriptive Coding, and Versus Coding (Miles et al., 2014). In Vivo Coding was
coding that used the language of the participants in an attempt to “prioritize and honor the
participant’s voice” (Miles et al., 2014, p. 74). Descriptive Codes assigned a word or short
phrase to a subset of data with the intent to understand “What is going on here?” (Saldaña, 2016,
p. 102). Versus Coding identified data which are in conflict with each other (Saldaña, 2016).
The choice of Versus Coding was based on an early finding from the matrix analysis regarding
tension.
During first cycle coding, I read through each of the transcribed interviews, student observations, and support documents for a single case. As I read, I wrote codes in pencil in the margin of the document. I also wrote multiple jottings, described by Miles et al. (2014) as “… the researcher’s fleeting and emergent reflections and commentary on issue that emerge during … data analysis” (p. 94). If the data seemed to be emerging as a concept, I wrote an analytic memo in a separate analytic memo journal. Saldaña (2016) described memoing as “a question-raising, puzzle-piecing, connection-making, strategy-building, problem-solving, answer-generating, rising-above the data heuristic” (p. 44). Following Saldaña, I used the coding process to generate written thoughts. While writing, further thoughts and concepts emerged.

During this cycle of coding, Descriptive, In Vivo, and Versus codes were equally considered. However, Descriptive Coding became the most prevalent code, followed by In Vivo codes, and then Versus codes. See Table 3 for a list of the number of inductive codes that emerged from the data for each case.

Table 3: Inductive and Deductive Codes per Case

<table>
<thead>
<tr>
<th></th>
<th>Deductive Codes</th>
<th>Inductive Codes for Jimmy</th>
<th>Inductive Codes for Danny</th>
<th>Inductive Codes for Victor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive</td>
<td>10</td>
<td>37</td>
<td>11</td>
<td>9</td>
<td>67</td>
</tr>
<tr>
<td>In Vivo</td>
<td>0</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Versus</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>50</td>
<td>19</td>
<td>11</td>
<td>90</td>
</tr>
</tbody>
</table>

*Note: All of the codes for each student were considered deductive codes for the subsequent student.*

**Word Analysis.** To discover the key concepts that emerged from the analysis to that point, I entered the analytic memos for the case in a word frequency program called Wordsift (www.wordsift.org) and generated a word cloud of the most prominent words. The words that
appeared the most frequently after ruling out superfluous words (such as the, and, or if) then formed the foundation of the second cycle coding process. The word analysis process was completed for each case independently. The number of memos analyzed per student was as follows: Jimmy, 58; Danny, 59; and Victor, 31. Key codes emerged from the analysis for each student. Raw data for the key codes were stacked to reduce the data for second cycle coding. Analytic journaling allowed for interpretation of the data following the word analysis process. See Table 4 for an overview of the key codes that emerged for each student.

Table 4: Key Codes following Word Analysis

<table>
<thead>
<tr>
<th></th>
<th>Jimmy</th>
<th>Danny</th>
<th>Victor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health</td>
<td></td>
<td>Abruptly Inflexible</td>
<td>Executive Function</td>
</tr>
<tr>
<td>Support</td>
<td></td>
<td>Conflict</td>
<td>Grudgingly Compliant</td>
</tr>
<tr>
<td>Tension</td>
<td></td>
<td>Grudgingly Compliant</td>
<td>Support</td>
</tr>
<tr>
<td>Zeitgeber</td>
<td></td>
<td>Support</td>
<td>Uncertainty</td>
</tr>
</tbody>
</table>

*Note:* The code conflict was prevalent in the word analysis for Danny. Based on analytic journaling for that code, the code abruptly inflexible was added to the key code list due to the similarity in the analysis for each code.

**Second Cycle Coding.** To prepare for second cycle coding, I pulled data from interviews, observations, and documents that had been coded with the four key codes (Table 4). This was a subset of the data corpus and included analytic memos that had been coded with one of the key codes. This was completed after conducting the word analysis. It was completed at a different time for each participant as the data as all cycles of coding prior to cross-case analysis were completed for a specific student before moving on to the next student. The rationale for this step was to reduce the data from the full data corpus to data that had been coded with the most prevalent codes. The data was stacked so that I could consider that section of data as a whole. I added jottings to the stacked data and wrote analytic memos (Table 5).
Table 5: Analytic Journal Entries

<table>
<thead>
<tr>
<th></th>
<th>Jimmy</th>
<th>Danny</th>
<th>Victor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Cycle Coding</td>
<td>58</td>
<td>59</td>
<td>31</td>
<td>148</td>
</tr>
<tr>
<td>Second Cycle Coding</td>
<td>17</td>
<td>35</td>
<td>17</td>
<td>69</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>94</td>
<td>48</td>
<td>217</td>
</tr>
</tbody>
</table>

**Note:** The analytic journal entries for Victor were emerged as more complete findings than the entries for the previous two cases, contributing to the need to write fewer entries to achieve equally rigorous results.

I then sorted the analytic memos into categories and extracting the data to support each emerging finding. Each student had a set of themes and a set of sub-themes as noted in Table 6. The process of developing written findings from the initial themes and sub-themes led to a reduced number of themes and sub-themes for most of the participants. Victor had the same number of themes, but the actual themes were different from the development of initial findings and the final case report.

Table 6: Individual Case Themes and Sub-Themes

<table>
<thead>
<tr>
<th></th>
<th>Jimmy</th>
<th>Danny</th>
<th>Victor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Results Memos Individual Case Findings</td>
<td>Themes</td>
<td>Sub-Themes</td>
<td>Themes</td>
</tr>
<tr>
<td>Jimmy</td>
<td>6</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Danny</td>
<td>6</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Victor</td>
<td>4</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Jimmy</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Danny</td>
<td>4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Victor</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Finally, I wrote an overview paragraph for each student as well as final findings supported with evidence from the data. From the second cycle coding analysis, I was able to craft an extensive results report. The process of pre-coding, data matrices, first cycle coding,
word analysis, second cycle coding, and development of individual case results was completed for each of the three cases.

**Cross Case Synthesis.** Yin (2014) considers each case of a cross-cass study to be an independent study. Upon completion of the individual case results for all of the cases, a cross-case analysis is completed.

At this point, I wanted to derive cross-case results from the entire data corpus to ensure that the results were not biased by my analysis of each individual case. Using the corpus of raw data for each case separately, I evaluated the codes that covered the greatest percentage of data. From that assessment, I developed a list of the top 20 categories. Four categories were in the top 20 of each of the three cases: frustration, mental health, social, and support. These four categories were the basis of the major cross-case themes of the findings (Appendix F).

I stacked the analytic memos for each of the four major themes to explore sub-themes. Raw data from the data corpus for specific sub-themes was pulled to provide supporting evidence for each sub-theme. A comprehensive cross-case report was written describing each theme and sub-theme. Four key themes were described at this point: support, mental health, socialization, and frustration. Seventeen sub-themes were also identified.

**Assertions.** The final step in the analysis process was the development of assertions. To develop the assertions, I closely reviewed the findings for each of the three cases as well as the cross-case findings. I jotted the theme of each paragraph of the individual participant findings as well as the cross case findings. I then reflected as to what it was about each finding that impacted male students with autism attending postsecondary education. I initially developed 12 assertions that upon further reflection were reducted into four assertions.
Figure 2: Description of steps taken during cross-case analysis

- **Top 20 Codes**
  - Developed a list of top 20 codes for each case based on percent of data designated for each code within each case.
  - Four themes were present in each of the three cases.

- **Themes**
  - Stacked the data for each of the four themes.
  - Wrote analytic memos and jottings.
  - Developed cross-case themes.

- **Assertions**
  - Developed assertions from cross-case themes and stacked data.
Chapter 4: Findings

The aim of this study was to understand how male students with autism experienced the academic, social, and self-advocacy demands of postsecondary education. All three participants were college students with autism. Each of the students had support with tasks involving executive function, with Jimmy receiving the most significant support, Danny receiving somewhat less support, and Victor receiving the least support. Each of the students had at least one comorbid mental health disorder that impacted his postsecondary experience. Each student was also content with his respective level and type of socialization. Finally, individuals providing support for students with autism experienced tension regarding their support.

Case 1 Findings: Jimmy

Jimmy was a friendly young man with autism who attended two on-campus classes and one online class at a community college with the significant support of his mother. His mother was enmeshed in his college experience and acted as his executive function. He was compliant with her wishes. His mental health concerns led to a tension between an insulated experience in postsecondary education and the possibility of an isolated existence at home.

Disposition. Jimmy experienced postsecondary education by compliantly following the directives of his mother as she guided him in social behaviors, decided how he would plan his studies, and coached him on self-advocacy. Jimmy was compliant in this process, as supported by mom’s statement, Jimmy’s mother: “… he doesn’t seem to mind that I whip him into shape” (Jimmy’s mother, interview, December 7, 2016). He was like many other college students who would prefer to attend college without doing all of the necessary work. His mother discussed her role in keeping him on track in the following statement, “… if I didn’t cattle prod him, I mean if I left it completely up to him, I know that he wouldn’t get everything done, but he doesn’t seem
to mind that I whip him into shape, but at the same time, you see, if he were left to his own
devices, I think he would have a harder time dragging himself away from sports and the other
things, and I think the time management is kind of harder” (Jimmy’s mother, interview,
December 7, 2016). Jimmy’s mother’s description of an online class student message board
provided another example of how she pushed him to do something that she did not think he
would do if she were not pushing. Students in the class were required to answer each of the posts
that another student made; if a post was left unanswered, the entire class would be penalized.
Jimmy’s mother described that, “of course, [Jimmy] probably would have left a few orphan posts
because he is already done with it, and I said [Jimmy], I’d hate for you to lose three of four
percentage points, because these people have yet to [answer the posts]” (Jimmy’s mother,
interview, November 16, 2016).

**Academics.** Jimmy took three classes during the semester of the study: algebra, history,
and interpersonal communications. The interpersonal communications class was online; the
other two classes were in-person classes. Jimmy’s mother was a significant support during his
study sessions. He either read out loud or had the history chapters read to him by his mother. He
wrote down the definitions for key terms from the chapter as he read. Jimmy completed his math
homework with his father, as his mother was less comfortable with math than she was with
humanities courses. He was academically successful in a previous semester, earning an B in his
computer skills class and an A in his English class.

**Accommodations.** Jimmy received services from the campus disability center. His
mother accompanied him to his appointment with the disability coordinator. Jimmy signed the
document that allowed the university to communicate directly with his mother regarding college.
Jimmy’s accommodations included testing in a low distraction environment so he could read out
loud to himself, extended time for quizzes and tests (50% additional time), use of a digital
recorder, use of a computer for extended responses on tests, and the use of a peer note-taker in
class. He had not used his accommodation for a digital recorder up to this point of his college
experience. He also had not used his accommodation for a peer note-taker.

Support. The most prevalent theme that emerged from the data for Jimmy was his need
for significant support throughout all facets of his life, including engagement in postsecondary
education. His primary source of support was his mother. This was evident from the beginning
of our first interview when we discussed who had helped him make the decision to go to college.
Jimmy’s mother said, “Who talked to you about that? Who helped you make that decision?”
(Jimmy’s mother, interview, August 17, 2016). When Jimmy answered that one of his teachers
had guided him to go to college, Jimmy’s mother continued with, “Who? Who?,” leading to
Jimmy’s response of “My mom” (Jimmy, interview, August 17, 2016).

Jimmy’s mother and father are his primary support system. His mother handled all of the
logistics of applying for the university, registering for classes, and paying for the tuition. His
mother drove him to his classes on Monday and Wednesday. Their home was about thirty
minutes from the college campus. His mom sat with him while he waited to attend class, waited
for him in the lobby while he was in class, and worked with him on his homework and reading
between his first class and his second class. His math class began at 10:00 a.m. and finished at
11:15 a.m.; his history class began at 2:30 p.m. and finished at 3:45 p.m. He and his mom spent
the break between classes completing his reading for history class. He was also taking an
interpersonal communications class as an online course.

Jimmy’s mother was enmeshed in his college experience, to the point where when
discussing homework, the pronoun “we” was used, as if they were both attending college. When
discussing an academic struggle that he experienced during a previous semester, Jimmy’s mother shared that “we had a hard time with that, yeah, and I kind of helped you through some of that, is that what you are saying?” and Jimmy replied, “yes, yes you did” (Jimmy & Jimmy’s mother, interview, August 17, 2016). At times mom seemed to go beyond just supporting Jimmy and spoke as a participant with him, using the terms we and us when referring to their studies instead of stating that she supported his studies. The use of the pronouns we or us continued over the course of the semester, as evidenced by the observing the behavior at least once during each interview. In September, Jimmy’s mother stated that “… we are doing much better managing the Monday to Wednesday” (Jimmy’s mother, interview, September 14, 2016); in October, while discussing a class assignment, she stated, “… well, we kind of already know what to do” (Jimmy’s mother, interview, October 12, 2016); in November, she stated, “I estimated it would take us about two to four hours to get the quiz and then get the prep and the exam part taken” (Jimmy’s mother, interview, November 16, 2016); and in December she described how Jimmy wrote definitions out for history class and explained, “… we did every one of those by hand … as we were reading, we’d read out loud” (Jimmy’s mother, interview, December 7, 2016).

Jimmy’s mother’s support went beyond that of a tutor. She was fully enmeshed in his college experience. Although she did not attend classes with him, she was engaged in every other aspect of his college experience.

**Executive Function.** A significant support that Jimmy’s mom provided was as his executive function. She planned his studies, kept up with his assignments, kept him on pace to complete extended projects, organized his materials, created his study plans, solved his problems, ensured that he understood the online material, communicated with professors, coached him with self-advocacy, selected classes that she had prior knowledge of to better
support him, recruited his dad to work with him on classes that she was not as comfortable with, helped him stay on task while studying and testing, and kept his schedule balanced between his recreational interest in watching football and the demands of college. If it were not for her planning, scheduling, and organizing, he would have fallen hard. A theme emerged during data analysis of his mom as a zeitgeber, someone who kept Jimmy on pace with issues related to time. However, the role of zeitgeber was not the only aspect of her role that impacted executive function. Some parts of planning were certainly related to time, while others regarded deciding what material to study, how to prepare for an exam, or how to solve a problem. Jimmy’s role was limited to the absorption of new knowledge and the demonstration that he has gained that knowledge.

Jimmy’s mother wanted to know as much information about assignments as possible, as evidenced by this exchange between Jimmy and his mother. Jimmy’s mother said, “does it bother you when he [the professor] explained … the group project without giving a handout? … do you get nervous about trying to remember all that so you can tell me?” Jimmy answered, “yeah, a little bit,” to which his mom replied, “you can see he’s almost like trying to remember it, and then, the harder he tries to remember everything, you know, some of it just floats out anyway” (Jimmy’s mother & Jimmy, interview, November 16, 2016).

Mental Health. Jimmy has comorbid diagnoses of an anxiety disorder and obsessive compulsive disorder (OCD). Early in the semester, Jimmy mentioned his OCD on multiple occasions when asked how he was feeling in general. During the first interview, his mom stated, “Can you tell here, he hasn’t seemed outwardly anxious a lot, but tell her what has crept up on you just a little bit, just the weekend, two days before school was to start, tell her what has happened?” Jimmy answered, “My OCD” (Jimmy’s mom & Jimmy, interview, August 17,
His mom explained that he had become slow at completing simple tasks, such as getting things out of his book bag. I observed this behavior when sitting in his history class. I noted that he was “taking a bit long to get his ziplock open” (observation, September 14, 2016). During my second observation of Jimmy’s history class, I noted that

[Jimmy] is still standing. It seems a bit awkward, like some sort of routine is necessary before sitting down. Finally he takes his backpack off, adjusts his shorts, situates chairs, and does a bit more packing while standing before sitting down. It only took a minute or so, but it was noticeable (observation, October 12, 2016).

At the end of class I observed similar behavior. I noted that, “[Jimmy] took a really long time to pack up. Even when he had everything together it took him a long time to pick up his backpack and actually leave (observation, October 12, 2016).

During his junior year of high school, Jimmy’s OCD caused significant setbacks in his behavior. His mother stated, “… it made high school very difficult and he lost some of the independence that he had gained” (Jimmy’s mother, interview, August 17, 2016). An example of his loss of behavior was that he no longer was able to get himself his own snacks at home, a skill that he had been able to complete before the onset of the severe OCD. I asked Jimmy if he makes his own meals or snacks and he replied, “No … I will go get my own drink [and] I used to [get my own snacks]” (Jimmy, interview, September 14, 2016). Jimmy takes medicine for his OCD, but continues to have times when it is more of a concern.

Anxiety was present in Jimmy’s responses during the course of the semester. From his mother’s perspective, Jimmy’s compulsiveness has replaced some of the behaviors common for individuals with autism. She stated,
… I think it started taking the place of a lot of the more autistic looking behaviors like flapping, pacing, tiptoeing, swirling, … so I think it winds up being anxiety relieving [and] it doesn’t seem to bother him, I think it’s more like rote behavior, it kind of soothes (Jimmy’s mother, interview, August 17, 2016).

Jimmy’s OCD behaviors are self-calming for his anxiety and have replaced his more outwardly autism-like behaviors. During the second interview, I asked Jimmy if he was feeling stressed. He replied, “A tiny bit, but mostly because of the, like, the time, what time to do which homework, and how much is too much, and how little is too little” (Jimmy, interview, September 14, 2016). Over the course of the semester, a significant portion of Jimmy’s anxiety manifested in concerns about time.

Jimmy was insulated from much of the pressure of college by the support of his mother. During the first interview, I asked Jimmy if he felt any pressure from college. He replied, “I don’t feel the pressure” (Jimmy, interview, August 17, 2016).

During finals, Jimmy had two finals on the same day, both with extended time. He was taking a test for more than six hours. After the exam, I asked him how he was feeling and he stated, “a little tired … I’m tired but I’m happy” (Jimmy, interview, December 7, 2016). The stress of the day manifested as an increase in facial tics. I journaled about it as

I met with [Jimmy’s mom] while [Jimmy] was taking his second final of the day. It was amazing to learn that he had been taking either his math or history final for six or more hours – basically straight! Mom gets up and checks on him periodically. Two extended time finals are simply too long! What’s happening here is that [Jimmy] is rising to the occasion and performing at his best for an extended amount of time. The obvious consequence was a dramatic increase in his tics. This is certainly not something he could
be expected to do over multiple days in a row (analytic memo journal, December 12, 2016).

**Socialization.** Jimmy’s mom supported him regarding social behavior. During an interview, Jimmy hiccupped. His mother prompted, “say excuse me,” and Jimmy dutifully replied, “excuse me” (Jimmy’s mother & Jimmy, interview, August 17, 2016). At times, the cues she provided seemed similar to how a teacher prompts elementary school-aged students, such as when she described how she may prompt him if a peer attempted to interact and he did not reply appropriately, “… if someone else were to say hey [Jimmy] and he didn’t automatically say hey or call them by name, then I’m usually right on it, I’m whispering to him, right on it, or say excuse me” (Jimmy’s mother, interview, August 17, 2016). Mom was generally by his side and was able to quickly address any social lapses that he may have exhibited.

Jimmy demonstrated an interest in being social with his peers. While I was observing his history class, I noted the following in my journal,

[Jimmy] said hello to a girl as she walked past … he told her he liked her dress. At this point, she wasn’t making eye contact. I’m not sure if she was ignoring him intentionally or just not paying attention. Another student came in and he said hi to him. I’m not sure if he got a response (observation, October 12, 2016).

Jimmy’s professor later shared with me that he worried that the comment about the girl’s dress would be misinterpreted. He discussed the comment that Jimmy made to a peer about her dress, “… he just started doing that the last month or so, ‘that’s a pretty dress’ or whatever … he said that to her at the end … but they seem to take it ok” (Jimmy’s professor, interview, November 16, 2016). Jimmy’s emerging socialization apparently seemed a bit awkward to his professor.
Case 2 Findings: Danny

Danny was a bright young man with autism who was a full-time student at a private university. Danny experienced postsecondary education as an unpleasant “grind” during which he had to do the same thing day after day. His relationship with his mother was conflict-ridden, as was his family life. In the family, there was conflict between his twin brothers, between his brothers and himself, between his mom and his brothers, between his mom and his dad, and often between his mom and himself. He tended to treat his mother as a scapegoat by taking out his frustrations with school or work on her. Danny was generally grudgingly compliant with the demands placed on him by his mother and his tutor. At times he was in a bad mood and refused to engage with anyone or to complete what was expected of him. The support of the tutor and his compliance with her guidance were what was keeping him successfully enrolled in college.

Disposition. Danny experienced postsecondary education by being grudgingly compliant with the demands of his mother and tutor, seemingly to keep them off his back and to allow him to do what he wants to do, which was to spend time isolated in his room on the internet with others from around the world watching videos of others playing video games. Danny was just going through the process of going to college. He stated, “I’m mostly just looking up, like doing the readings, all that stuff, and that’s basically it, I’m doing what’s required, what’s asked of me” (Danny, interview, November 19, 2016). Later in the same interview, when discussing the time demands of being in school and having a job, he said, “it sucks, but that’s how it goes” (Danny, interview, November 19, 2016). When discussing that he felt more pressure around the time of midterms, he said, “I’m just feeling more like I have more stuff to do that I don’t really want to do, that’s all” (Danny, interview, November 19, 2016). Often Danny was compliant, but he was grudgingly compliant. He fought back against demands upon him, but he did not take steps to
autonomously do what he had the right to do as a legal adult. No one had guardianship over him. If he had decided to, he could have chosen to leave the house and refuse to engage in his job or in his college coursework. However, it was unlikely that he would have moved out without being kicked out of the house. His pattern was to be angry, to take it out on his mom, and then to go into his cocoon of a room and escape into his online world. His grudgingly compliant behavior was to ensure that he was allowed to continue living at home with the ability to periodically escape to his room.

**Academics.** Danny was taking five classes during the semester of the study. He had religion class and visual communication class on Mondays and Wednesdays. Tuesday was his long day, with his first class being Crime in Victorian England, then History of Film, and on Tuesday evenings he had History of Animation class. Thursdays he had the first two classes, but not the third class. Danny did not have class on Fridays. He generally worked 14 hours a week at a pizza restaurant. He stated that he studied about an hour a week for each subject.

**Accommodations.** Danny met with the disability coordinator with his mother early during his freshman year. His primary accommodations at that time included extended time and testing in a separate room as he needed to pace while thinking about his answers to test questions. During the course of the study, he did not receive any accommodations. Early in the study, he arranged to meet with the disability coordinator, but that was just to keep his mom off his back about scheduling a meeting. He met with the disability coordinator once, and then missed a second meeting. Danny had only one accommodation that he discussed with the disability coordinator during the course of the study, a peer note taker. In previous years, he has had extended time (double the time that students are generally given) for assessments, the option of using an isolated testing room so that he can stand and pace during an assessment, a peer note
taker, the right to use his laptop in class to type his own notes, a note to the professors that he may need additional time during office hours to get clarifications regarding assignments, and a request that the professors notify the disability coordinator if he had a pattern of poor attendance or missing assignments. When asked what Danny’s accommodations were for the semester of the study, the disability coordinator stated, “the ones he doesn’t use?” (private university disability coordinator, interview, October 13, 2016), indicating her annoyance at the fact that Danny did not take advantage of his accommodations for his disability.

**Support.** Early in his college career, Danny was struggling significantly with keeping up with his academic assignments and actually failed a class. At that time, his mom hired a tutor for him. During the study, Danny met with his tutor weekly. During high pressure times, such as around midterms and finals, he met with her twice a week for at least an hour at each meeting. Danny’s tutor reviewed his responsibilities for the week based on his syllabus and gave him intermediary deadlines so as to ensure that he completed assignments in a timely manner. She edited his writing pieces, but despite his requests, she refused to implement the edits for him.

Danny’s mother handled the logistics of applying to colleges, filling out financial aid forms, and registering for classes. According to Danny, his mom “went behind my back and put me into [a private university]” when he actually had wanted to go to the city university (Danny, interview, September 24, 2016). However, as the study started, he had attended the private university for two years and he felt that it was a good fit for him.

**Executive Function.** Danny had significant conflicts that stemmed from his difficulties with executive function. At one point early in his college career, Danny was frustrated with a class and went to the bursar’s office to drop the class. The staff informed him that if he dropped the class, he would be considered below full-time and that there may be consequences for his
financial aid. He told them that he understood the consequences and dropped the class. His mother describes the situation as,

he pulled this shit on me at [the university] and I about lost it, he decided that he was going to drop a class, well it put him down to part-time, when he went to part-time, he lost all of his aid … and he didn’t tell me, and one day, um, I got something in the mail and it said your aid package is ready, well this was like, you know, a month and a half, or about a month after school started, and I’m like what do you mean, my aid package is ready? My aid package was ready a long time ago and we already accepted all of it … and everything that had had big totals next to it when I logged on to his account was a 0 and I about lost it and I called the next day and it was because he had dropped that class and I freaked out and I called [the disability coordinator] the next day at the disabilities office and I was like what were we going to do and I called the bursar’s office and I called the financial aid office and they said that it had been explained to him, and he was like, that’s fine, that’s fine, he didn’t know what they were talking about and I went off, and I was like, to the bursar’s office and the financial aid office, you do realize that you were speaking to a, you know, a, um, person with disabilities, well, no, I said, oh yes you were, and they were like, there’s nothing we can do about it and I was like oh, you want to make a bet (Danny’s mother, interview, September 24, 2016).

With the support of the disability coordinator, his mother was able to have him enroll in a class that had a later starting date, so he was brought back to full-time enrollment and was able to keep his financial aid. If the disability coordinator had not found a class that Danny could get into late in the semester, the tuition he would have owed would have been prohibitive for the family and he would have had to drop out of college for the semester. This would have been a major
consequence for an individual with a disability who appeared to be making an informed decision. With this event, Danny’s mother realized that Danny would need more support than she anticipated as he developed into a young adult. She said, “it’s what finally got me to put him on the [state Medicaid waiver] waiting list” (Danny’s mother, interview, September 24, 2016). His mother realized that in the future he would need significant support. The event also contributed to his mother’s uncertainty about his future.

**Mental Health.** When Danny was faced with something frustrating or non-preferred, he had a tendency to abruptly shut down. During the semester, Danny made an appointment to see the disability coordinator the morning of our October interview. During an interview with the disability coordinator, I discovered that he met with the disability coordinator once, but then did not show up for his subsequent appointment. This led to his mother pondering how much support that Danny might receive from the disability coordinator if he did not fulfill his responsibilities. His mother stated, “I wonder if she is going to come back and say to me, well, he has to do that part? … you know, he has to come and, but I want her to e-mail, make sure she e-mails all his professors those letters, but I don’t know if she will or not” (Danny’s mother, interview, September 24, 2016). Danny’s mother felt tension between the structure of a university in treating students over the age of 18 as independent adults and the needs that Danny had for support that was imperative even if he did not personally complete the steps to gain that support.

When asked how he was feeling near the beginning of the semester, Danny stated, “I feel in a good mood a bit, a bit anxious about things is never a bad thing, so I’m a little anxious, but I’m mostly confident, overall” (Danny, interview, September 24, 2016). By the end of the semester, he answered a question about how he felt after writing four papers as, “extremely
stressed … it made me irritable” (Danny, interview, December 17, 2016). I journaled about my perceptions of his disposition as follows,

He seems to be prone to being irritable. Somehow he makes me think of a rather grumpy old man, living a life of drudgery. Like he is just not ever happy … and the decisions of those in authority (or parents who have money that they don’t give him for a trip in January) make his life miserable. I remember transcribing that his mother said something about him liking to complain about how difficult she was for him. Perhaps what is relevant is that he is a passive actor blaming others for his misfortunes… does that mean he doesn’t take responsibility for himself? (analytic journal memo, February 13, 2017).

Danny’s disposition contributed to the conflict in the home. His mother shared that she felt a tension regarding how much she should push back when he was noncompliant as the impact on his mental health may be severe. When she discussed his reaction to a difficult situation, she stated, “I was a little worried about him, because I know how he can decompensate, and I was afraid that was going to happen” (Danny’s mom, interview, December 30, 2016). Danny’s mom’s statement reflects the fine line between Danny functioning in society and him completely shutting down and not engaging in society.

**Socialization.** Danny has little to say about his friends or classmates. He stays mainly isolated. He said, “I don’t talk to them much, there are a few of them that are friendly, but I guess I like to keep to myself” (Danny, interview, September 24, 2016). That position was supported by my observation during his History of Animation Class. Before class started during my first observation, I wrote, “Before class, Bailey had on his headset and appeared to be listening to music” (observation, October 11, 2016). Before class started during the second observation, I wrote, “Several students chatting on the left of the room. [Danny] on Facebook on
his computer on the right side of the room. A total of three students were chatting, while three other students, including [Danny], were on devices” (observation, November 15, 2016). Danny appeared to prefer to keep to himself. However, when asked to engage with classmates by the professor, he complied. During the first class that I observed, the class was asked to talk with peers about the topic being discussed. I wrote, “He talked to the girl to his left for about 90 seconds. I saw some doodles on his note page” (observation, October 11, 2016). While he was compliant, it was for a limited amount of time.

Danny supported his desire for isolation when he answered a question of how he felt in general and he stated, “I don’t like talking to people much at all … I just like to keep to myself, honestly, that’s all” and he went on to say that “certain people think it’s a good idea to let people who like to keep to themselves be forced to talk to people, it’s a bad idea” (interview, December 17, 2016). With this statement, Danny is saying that he prefers to be isolated and also that it frustrates him when others, particularly his mother at this moment, forces him to engage socially.

Danny’s primary mode of socialization was on the computer chatting with friends around the world on the internet. His mother described his activities as, “I think they are watching streams of games … I think, now they play games sometimes too … I think more than anything they all watch some people play” (Danny’s mother, interview, December 30, 2016). During the semester of the study, Danny was saving money to go to a gaming conference in Washington, D.C., the following January. I journaled about that plan as,

This is definitely a community, not just a random group of people. I find it particularly interesting that he wanted to meet some of these friends in person at the conference in the Washington, D.C., area … [Danny] chooses to be physically isolated while still being socially active with like-minded peers (analytic journal, February 15, 2017).
Danny’s mom hypothesized about his need for the virtual world during an interview. She stated, he’s always like on the computer talking to these virtual strangers in virtual reality mode, you know, I think if he, and the anxiety, I think, causes him to decompress into that, into that, which I see as like a collapsing into his own world … but going to job, going to work, going to school, forces him into the world, sometimes I still think he feels alone in the world and I don’t think he likes that, but then sometimes I think he wants it, it’s this push-pull between wanting connection and wanting everybody to leave him alone, you know, maybe that’s why he likes the virtual world so much, because they are separate from him he can click them off when he wants to (Danny’s mom, interview, December 17, 2016).

Danny experienced socialization with classmates in a limited manner and choose to engage extensively with peers who appeared to have similar interests online. He was content with his level of socialization and was frustrated when undesired socialization was forced upon him.

**Case 3 Findings: Victor**

Victor was a charming and articulate young man with autism who participated in two online classes at a community college while working the night shift at a local package delivery company. During his four years in college, he has emerged socially and was increasingly independent, but his mother still checked his school e-mail daily. Compounding problems have led to multiple class failures in the past, although he successfully (albeit barely in one case) completed the two courses in which he was enrolled during the semester of the study.

**Disposition.** Victor tended to be intolerant of things he did not like or was not interested in. When asked about things that annoy him about college, Victor’s answers over the course of the semester centered around his intolerance for many different things. The intolerance stemmed
from his being forced to engage in something because someone in authority had deemed it necessary. For many of these issues, he would be grudgingly compliant, but would still have significant annoyance with the issue. For example, Victor had a difficult time taking classes in subjects for which he was not interested. His mother shared, “he has a very difficult time taking anything that doesn’t relate to what he thinks he should need to know for a class, so extraneous classes, which are required, electives are required, those will set him off, and it will become a diatribe” (Victor’s mother, interview, September 17, 2016) These issues also tied in to the concern that he would close down from the stress of such a situation on his mental health.

**Academics.** Victor was working on an associate’s degree in business management. When he started college, he attended a satellite campus that did not have significant traffic concerns. He later took a few classes at the downtown campus, which was stressful as he did not enjoy driving downtown. He was finally able to take all of his classes online, which his mom says he preferred because he “didn’t like going to class and being with the public, you know, just the class and the people” (Victor’s mother, interview, September 17, 2016). During the semester of the study, Victor took an economics class and a business management class. Both classes were completed online from his computer workstation in the den of the family home.

**Accommodations.** The disability center provided accommodations for Victor when he attended on-campus classes. However, he did not submit an accommodation letter to his online professors for the current semester, even though he would have benefited from extended time on at least one assessment. He found that he generally had most of his accommodation needs met simply because he was taking classes online. Victor stated,

I mean, it doesn’t really matter, but they’re, I’m a, because you can start it whenever you know you will have free time, you can start it whenever you know you are going to have
free time, a lot of stuff, you can get all the stuff together beforehand, because it’s, you start the test when you are ready as long as you get it done before the … now some of the tests, like, oh once you start it, you have three hours to complete it, but yet you start it when you are ready to start it, as long as it’s turned in before the deadline (Victor, interview, September 17, 2016).

Victor’s mom was comfortable with his choice to not use any accommodations for online classes, but she realized that if he took on-campus classes again, he may need the accommodations once more. In on-campus classes, “the agitation level, the stress level would be much higher …when that happens then you are going to need more extended time, more processing time” and she felt that in-person peer interaction would necessitate additional supports; when asked about group work, she stated, “that would be another whole accommodation” (Victor’s mother, interview, November 12, 2016). Victor’s need for accommodations was mostly satisfied by the nature of online classes in that they could be completed without leaving the home or dealing with other individuals socially.

**Support.** Victor’s mother handled the logistical steps of applying for college, registering for classes, and filing for financial aid. When asked if she supported him with the logistical steps of going to college, his mom replied, “I did it all” (Victor’s mother, interview, September 17, 2016). While in the early years of going to college, he received tuition money from a state-sponsored scholarship. He was not eligible for Pell Grants or other federal money due to his parents’ income level. His mother’s level of support had decreased somewhat over the years, but she continued to check his school e-mail on a daily basis during the semester of the study so as to ensure that he satisfied course requirements.
While meeting with the disability coordinator, Victor signed the document that allowed his mother to speak on his behalf. Mom said that after registering for college, “… we went over, we met with the people from the disabilities office, who told us how to pursue everything, gave us the letter we needed … we really haven’t had any problems as far as that goes” (Victor’s mother, interview, September 17, 2016). Victor’s mom described how she supported him as she explained how they selected classes for an upcoming semester,

so when we looked at classes, we usually made a list, and then we narrow down which ones seem to be … I’ll do it with him, because I want to be supportive, and I do have opinions which I share and he listens to me, but ultimately we try to pick what’s going to be the most interest for him that still fulfills what he has to have, so we just have to balance it and do what we can” (Victor’s mother, interview, September 17, 2016).

Victor’s mom was able to balance his needs for support with his needs regarding his anxiety disorder and his disability.

Victor’s mother generally cooked and prepared his dinner, did his laundry, and took care of chores. When Victor was asked if he made his own meals and snacks, his mom paused for an extended amount of time and then laughed loudly. Victor then sheepishly answered, “I do sometimes” (Victor, interview, October 8, 2016). His mom honored his limitations regarding sensory issues. When asked if he took out the garbage on request, his mom shared that, “… we’re also cautious about what we asked, because that’s not one that he would just get up and do, that would be definitely threatening, because garbage is again more germy than what he normally would choose to do” (Victor’s mother, interview, October 8, 2016).

**Executive Function.** An area of executive function that was a challenge for Victor was how he reacted when he was disinterested in a topic. If Victor was forced to engage in a non-
preferred topic, he struggled to complete the class which would then lead to failure. He stated, “…. once I lose interest or just start being distracted because it’s not like I thought it was, it’s really hard for me to remember the information I need to, and focus when I need to” (09/17/16). This struggle has led him to fail classes in previous semesters, some of which he withdrew from and some of which he simply quit attending. For the last year Victor has participated in a tuition reimbursement program with his company. For each class in which he earned a C or higher, his company reimbursed him for the tuition. If he did not earn a high enough grade, it was his own money that he was losing. However, the desire to detach from something in which he was disinterested was more powerful than the cost of the classes, a behavior that was significant given the careful way he handled his money. The force to need to disengage when something was no longer interesting or no longer met his expectations was powerful. His mother stated, “the thing is, if he loses interest or if the class isn’t what he thought, money is not a big enough motivator” (Victor’s mother, interview, September 17, 2016).

Victor’s difficulty with executive function was related to his ability to keep track of assignment due dates for his online classes. During both times that I observed him engaged in coursework, he logged on to the computer and was surprised that he had an assignment due that day. During the first observation, I wrote in my notes, “Interesting. He logged on and was surprised that a test was due that night. I would have thought that there was a date scheduled for assessments on the syllabus. Time, schedule, planning?” (observation, February 4, 2017). A similar thing happened during the second observation. I wrote, “He said that it was weird that something was due. He said, ‘good thing that I logged on today, because those weren’t here yesterday’” (observation, February 11, 2017).
Mental Health. Victor has comorbid diagnoses of anxiety and obsessive compulsive
disorder (OCD). During middle school, his mental health issues manifested as severe behavioral
outbursts, leading the administrators to express their concern that going to high school may not
be appropriate for him. He attended a high school with a robotics program and did quite well in
an somewhat isolated situation with other similar students who attended all of their classes
together in a cohort over the years. His behavior regarding mental health issues has improved
over the years. His mom stated,

We’ve got much less pacing, we used to talk about, seriously, before work, or before
school, it would be pacing, pacing, pacing back and forth in the house, and his dad would
say, [Victor], you don’t have to leave for an hour, and he was like, I know, but I’m
already, and he’s picking at his, the thought of having to go (Victor’s mother, interview,
October 8, 2016).

Victor has made dramatic improvements regarding his capacity to function in society over the
last couple of years. During the study, he was working for a large corporation and had outlasted
many of the employees who were working there when he started. However, when faced with
pressure, he tends to overreact. His mother stated,

I’m not seeing a lot of pressure from school, so I don’t see a lot of need to handle it, I can
tell you in other areas when there is pressure, he’ll still have the initial tendency to
overreact to it, instead of stopping to think of it, and just saying this isn’t that bad, you
know, his initial thing, it’s easier to get angry about feeling pressure than it is to try to
deal with it, and so that’s, you know, an ongoing, and he and I can talk about it, he can
scream, but it becomes something totally different when it involves other family
members (Victor’s mother, interview, November 12, 2016).
Over the years, Victor managed to reduce the impact of his frustration while not at home, while he continued to take out his frustrations on his family.

Victor’s anxiety was apparent during an observation of him completing his coursework. I wrote in my field notes, “A bit of anxiety. Talking himself through the possibilities of what may happen. Speaking out loud when he really needs to clarify a statement” (observation, February 4, 2017). I later wrote that he was “really troubled by the accuracy of a question.” A couple of minutes later I wrote, “still on the same question. Learning about topic. Deep breath. Said he was terrified to click submit” (observation, February 4, 2017). He later cheered himself on while preparing himself for the possibility of a bad score.

Mental health had an impact on the uncertainty regarding his future. During the study, Victor had a minor car accident. However, his mother expressed her concern to me that he would stop driving. Victor stated about probable living situations after graduation, “moving on my own would be difficult, I’d have to be like married with somebody who could tolerate me and then go out with them, because alone, I don’t function that well” (Victor, interview, September 17, 2016). His long-term plan is to live at home and assist his brother with an exotic animal breeding business. Victor stated, “right now he’s looking into breeding several types of animals for sale and also after that, going in to open his own veterinary clinic, I figure if I fail everywhere else, I can at least help him out” (Victor, interview, September 17, 2016). Victor’s statement about his future plans that will occur “if I fail everywhere else” are indicative of his tendency toward catastrophic thinking. While discussing his likelihood to self-sabotage regarding moving forward with major life events, his mother stated to Victor, “you do get overly negative about things, you always want to expect the worst to happen” (Victor’s mother, interview, December 10, 2016). She explained to me that,
that’s just how his mind works, he’s going to come out with the worst possible thing that can happen, but if it doesn’t, he’s like, well, it still could have and then he just blows it off, but at the time he’ll let himself get aggravated because this is what could happen out of all of it (Victor’s mother, interview, December 10, 2016).

Victor’s mental health comorbid diagnoses of anxiety and OCD, as well as a general tendency toward catastrophic and negative thought processes, cast a level of uncertainty over his future.

Socialization. Victor’s likelihood of being social has developed over the four years that he has been in college. Several years ago, he was likely to be either on his computer, sleeping, or watching television with his mom and his brother. However, during the course of the study, he became more social. His mother said that, “he has gone out a couple of times with … other people, he went out with a girl, but he also, it wasn’t just [the girl] you were with, it was her brother, you were out with people in public” (Victor’s mother, interview, February 11, 2017). That is a significant difference in socialization for someone who had previously reported to his mother that he was prone to be “OD’d from human society” (Victor’s mother, interview, November 12, 2016).

When asked about what he has found fun about college, Victor stated, “there’s been a few instances where I’ve met some fairly colorful characters in classes. Generally, that’s probably one of the better parts are those kind of people you can meet” (Victor, interview, December 10, 2016). However, Victor tends to be intolerant of others who are not knowledgeable about what he considers basic facts. He stated,

the fact that I go in there, our first thing is list as many countries on the globe as you can and we had people labeling Europe as North America, they just write United States instead of Russia, these were like grown people and it’s like, you’re scoring a 35 … it’s
cause you get in the classes and like you see the best and the worst, the worst annoy me because it’s like why are you here, you need to be like a couple levels below learning right now (Victor, interview, September 17, 2016).

Victor’s intolerance for others extends to his professors regarding the perceived personal benefit that the professor may have received from a course requirement. He described a situation about a textbook that he was required to purchase,

we need you to buy a $300 textbook because it comes with the code in the back of it, before you can take the class … you know once you unwrap it, you can’t return it, first day in class, alright, we need all of you to unwrap your books, open it to prove you have the code in the back … now put it away, we’re probably not going to use it this year … guess who’s name is on as one of the writers (Victor, interview, November 12, 2016).

Victor was intolerant of professors requiring students to purchase a book that would not be used during the semester simply to have access to online content. He had a similar frustration with a course assignment requiring a Facebook account. He stated that it “serves as nothing but to make Facebook money and [the professor] ad revenue off the little club she made for the classroom” (Victor, interview, December 10, 2016). Victor’s intolerance shifted to societal concerns in a discussion regarding the need to pay for college rather than having it supported by taxes. He stated, “should this not be something covered by taxes, considering you’re literally telling them [students] that they are not going to make enough money to support themselves if they don’t do it?” (Victor, interview, February 11, 2017). Victor’s intolerance stems from being forced to engage in something because society, or a professor, has deemed it necessary.

Victor also demonstrated intolerance toward questions that seemingly insulted his intelligence. During an observation of Victor completing his online course, I wrote, “[Victor]
became annoyed that the creators of the test think students must be dummies if they think communism would be a reason to leave India” and that he was “bothered by a statement that an economic concept was ‘widely believed’” (observation, February 4, 2017). Victor’s intolerance manifests as frustration with the lack of intelligence of others if the facts did not align with his interpretation of a phenomenon. This frustration extends to test-makers.

**Assertions**

Four assertions emerged from the analysis of the data. The first assertion found that male students with autism attending postsecondary education needed varying levels of support for tasks requiring executive function. The second assertion is driven by the impact of comorbid mental health disorders on the postsecondary experience. The third assertion considered the socialization of the students with autism. Finally, the fourth assertion described the tension experienced when supporting a male student with autism during postsecondary education.

**Assertion 1: The experience of male students with autism in postsecondary education is impacted by executive function difficulties.** As I started this study, I hypothesized that male students with autism would need significant support and that the support would partially derive from the social capital of mothers. I also hypothesized that students with autism would struggle with responding to the changes in pace and rhythm of the college semester as restrictive patterns of behavior and insistence on sameness is a characteristic of autism.

What emerged from the analysis was the need for support in areas requiring executive function. Time management was an aspect of that need and the theme of needing a zeitgeber to ensure that the students were on track was supported in the data. However, the need for support extended further than the need for help with issues regarding pace, rhythm, or time. The students needed support for setting up study plans, deciding what to study and when to do it, organizing
materials, initiating tasks, persisting with tasks, attending to tasks or classes that were not interesting, and communicating with professors and others at the university.

I originally coded these early findings as the need for a community living services worker, but the concept of executive function seemed to address the needs of the students comprehensively. A brief review of the literature on executive function supported the appropriateness of executive function as the lens through which to consider support in understanding how male students with autism experience postsecondary education.

**Evolution of executive function as a theme of the study.** Executive function was not a component of the conceptual framework for this study. However, it emerged during analysis as a key finding. During the early development period of the study, executive function was an aspect of the experience that I understood could be problematic for students with autism.

I immersed myself in the literature on the transition of students with disabilities during the transition to adulthood. I successfully prepared a dissertation proposal and obtained IRB approval from a community college for my study. I reviewed the literature, beginning with the limited research on the transition to adulthood for students with disabilities and continuing with the more limited research on students with autism attending college. During this process, I made only one journal entry regarding executive function, a quote from a website on the college living experience in which I quoted that executive functions “impact learning including time management, organization, planning, and prioritizing” (www.experiencecle.com/about-cle/academics, reflexive journal, March 31, 2016). As discussed in the literature review, the scholarly literature on students with autism participating in postsecondary education was found to be sparse and executive function was not an aspect of the conceptual framework of the studies discovered during the review.
Executive function during early coding. An aspect of the conceptual framework for this study was entrainment, which is essentially consideration of the impact of time on a phenomena. While time was a significant factor for Jimmy, it emerged from the data that something more broad than issues regarding time was impacting Jimmy’s experience. I used the code zeitgeber to designate a support person who helped Jimmy keep on track with time related issues, such as due dates. However, something more significant than time was a factor in Jimmy’s experience. I wrote in an analytic journal entry that I was considering a code for

community living support (CLS). I’m trying to specify a name for the individual [Jimmy’s mom] recommends to reduce barriers. I considered onsite, advocate, and liaison and then I searched on the internet for the definition of CLS workers, which was something Danny’s mom had mentioned during our interviews (analytic journal, January 5, 2017).

I was doing first cycle coding for Jimmy while I was engaged in interviews for Danny. Danny’s mother worked for a state Medicaid waiver program and had discussed CLS workers during casual conversation between interview questions. The definition I wrote in my analytic memo for CLS worker was that

community access is a service designed to support a participant to participate in meaningful routines, events, and activities through various community organizations. Community access is designed to empower a participant in developing natural supports within groups and organizations and the staff fading out after the participant is well established within a group with support. The service stresses training that empowers a participant in acquiring, practicing, utilizing, and improving skills related to connecting with others, independent functioning, self-advocacy, socialization, community
participation, personal responsibility, financial responsibility, and other skills related to optimal well-being as defined in the participant’s person-centered service plan (www.pathforwardky.com/community.asp).

The code of CLS worker was added to my coding list. The code represented the support that a student received from an adult to engage in postsecondary education.

Executive function as a theme. The term executive function did not appear in my journal entries until after I had completed second cycle coding for Jimmy, the first participant in the study, and I was writing analytic journal entries to allow themes to emerge from the data. I wrote,

How does Jimmy experience postsecondary education? Within the insulated experience provided by his mother as a zeitgeber, study partner, coach. If mom wasn’t acting as timekeeper during assessments and urging him along, she said “I don’t know where he would be if I didn’t … I’d be afraid that he would really get stumped and sit there for 12, 13, something minutes on one single thing.” So mom acts as his executive function. She really does. She plans, solves problems, schedules assignment study times, ensures that assignments are complete, ensures that he answers orphan posts for his online class, reads his e-mails and ensures that he responds (analytic journal, January 30, 2017).

I then made a note to myself to find a citation and definition for executive function. I continued, How does Jimmy experience postsecondary education? With the support of his mother, in particular her almost comprehensive support of aspects of college requiring executive function. She is his executive function and he compliantly follows her requests. If it weren’t for her planning, scheduling, and organizing, he would fall hard. So what mom is doing is minimizing his role to be the intake of course content and the demonstration of
his knowledge of that content – she handles everything else. That is more of a traditional epistemology with the goal being that [Jimmy] completes a course and receives the credit, as opposed to a postmodern epistemology in which [Jimmy] is learning to be an independent, contributing, educated member of society. For [Jimmy], there is no tension. Stress and pressure, maybe, by having his time arranged and possibly missing his favorite shows, but mom minimizes the stress by spreading out his assignments and completing assignments in chunks and not all at once (analytic journal, January 30, 2017).

A major finding that emerged from the data during the individual case analysis for Jimmy, the first participant, was that he needed significant support for areas of executive function. This finding emerged while intentionally considering the data of the case and writing so as to discover themes.

Executive function was not an aspect of the conceptual framework for the study, but it became an inductive code early in first cycle coding for the second participant, Danny.

As each of the students in the study started his experience with postsecondary education, someone in his support system handled (or closely supported him with) all tasks requiring executive function, leaving the student to focus solely on the learning of course content material and the demonstration of knowledge of that content. Kaufman (2010) described the need to provide “surrogate prefrontal lobe support” for students with deficits in executive function (p. 81). The concept of a surrogate resonated with my findings as the support persons of the students in this study initially acted as a surrogate for the student by applying to college, registering for classes, and securing financing for students. Discussion of the years the students were in college before the study began reflected significant support for areas of executive
function. The need for executive function support continued over the duration of the study and was evident for each of the students.

**Areas of executive function.** I reviewed the analytic journal entries and individual case results for all three students to discover which aspects of executive functioning were represented in the study. Students in the study engaged in 31 types of tasks that I categorized into five areas: logistics, coursework, study skills, time management, and communication (Figure 3). Each task was an aspect of the college experience for the students and supported the learning or demonstration of knowledge of course content. While knowledge of course content must be demonstrated by the student independently, the students in the study had varying levels of support for the tasks that led to the goal. Logistics included tasks such as applying to college and registering for classes, coursework represented tasks such as taking assessments and reading course material, study skills included developing a study plan and completing assignments, time management covered aspects such as pacing assignments and estimating the time necessary for a task, assessments indicated support while taking a test, disability center represented interactions with the disability coordinator, and communication included addressing e-mails and engaging in group projects.

Table 7 presents the 31 categorized tasks as well as each student’s level of independence completing that task. I determined the level of independence by reflecting on the level of support that the student had had for each task. I designated the level of support as either significant support, some to limited support, or independent. Tasks designated as independent were completed by the student without any additional support. To designate independence levels, I asked myself the following questions:
Figure 3: Areas of executive function

- Did the student complete this task independently? In that case, I designated the task as completed independently.

- Did the student complete this task with some support? For example, the support of a notetaker as an accommodation was specified as an area with some support as the student also took his own notes.

- Did the student complete this task with significant support? An example of a student having significant support was the handling of the logistics of registering for college. For each of the students, the mother completed the entire process with little or no support of her son.
Table 7: Levels of Support for Tasks Requiring Executive Function

<table>
<thead>
<tr>
<th>Logistics</th>
<th>Jimmy</th>
<th>Danny</th>
<th>Victor</th>
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<tbody>
<tr>
<td>Select college</td>
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<tr>
<td>Apply for college</td>
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<tr>
<td>Apply for financial aid</td>
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<tr>
<td>Register for classes</td>
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<tr>
<td>Travel to class</td>
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<tr>
<td>DC: Schedule initial visit</td>
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<tr>
<td>DC: Attend initial visit</td>
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<tr>
<td>DC: Engage in subsequent visits</td>
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<tr>
<td>DC: Request accommodations annually</td>
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<td>na</td>
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<tr>
<td>DC: Arrange accommodations for tests</td>
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<td>na</td>
<td>na</td>
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<tr>
<td>DC: Dealing with problems</td>
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<tr>
<th>Coursework</th>
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<tr>
<td>Read material</td>
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<tr>
<td>Attend class</td>
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<tr>
<td>Take in-class assessments</td>
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<tr>
<td>Take notes</td>
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<tr>
<td>Prompt for on-task in assessments</td>
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<tr>
<td>Prompt when stuck in assessments</td>
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<th>Study Skills</th>
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<tbody>
<tr>
<td>Review syllabi</td>
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<td>Review online requirements</td>
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<tr>
<td>Complete assignments</td>
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<tr>
<td>Develop study plans</td>
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<tr>
<td>Completing non-preferred tasks</td>
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<tr>
<td>Submit assignments</td>
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<tr>
<td>Draft &amp; edit papers</td>
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<tr>
<th>Time Mgmt</th>
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<tbody>
<tr>
<td>Estimate time necessary for task</td>
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<td>Zeitgeber</td>
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<tr>
<td>Pacing assignments</td>
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<tr>
<td>Remember appointments</td>
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<tr>
<th>Communication</th>
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<tbody>
<tr>
<td>Communicating with professors</td>
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<tr>
<td>Reading &amp; answering e-mails</td>
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<tr>
<td>Facilitate group projects</td>
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Key:
- Significant support
- Some to limited support
- Completed independently
- na Not applicable
- DC Disability Center
**Logistics.** The mothers of all three students in the study handled all of the logistics of applying to college, registering for classes, and filing for financial aid. When asked if his mom handled the logistical steps of going to college, such as completing the application and registering for classes, Jimmy said, “yeah” (interview, August 17, 2016). His mom added, “I helped him pick out classes, well, he was kind of with us on it, but we did the bulk of it, making sure he got registered … I don’t think he would have gone through the registration process too much on his own” (interview, August 17, 2016).

Danny’s mother shared that she filled out the applications for three universities and that he handled the entire process. Danny’s mom said, “… I completed everything … I filled out the FASFA and I put [the private university] as number one, and then I did all the individual work that needed to be done that they asked for” (interview, September 24, 2016). Danny then became extremely angry as he had wanted to attend the state university. His mom stated, … did he scream about it? He just, oh God, he just screamed, and it was, that first year was kind of rough … and then anytime something went wrong, he would go into a tirade and say how much he hated me and how I had ruined his life, and everything would be different if he went to [the state college] and he was so unhappy, and he was so depressed, and that his whole life was horrible and it was my fault, I had taken him away from his friends, I didn’t want him to have any friends (interview, September 24, 2016).

Danny’s mom then said to him that,

you are an adult, you are an intelligent adult, all the information that you need is right there on each school’s website, and if it’s not on the website, all you have to do is call up the bursar’s office and the financial aid office and you can get all the information you need and you are welcome to get the papers you need to get on the portal you need to be
on, whatever you need to do, and fill out everything you need, and you can get all the information you need and … you can transfer, you are an adult, I don’t have any pull over you, I don’t have guardianship of you, I don’t have power of attorney over you, I don’t have anything, you can make a choice and you can make it happen, that’s part of being an adult (Danny’s mom, interview, September 24, 2016).

This discussion went on for years. Danny’s mom said,

you are 18 or you are 19, this went on for a long time, you are 19 years old, you are 20 years old, really not too much 20 … if you don’t like where your life is, sit down, figure it out, where do you want your life to be and make it happen (Danny, interview, September 24, 2016).

This was a major conflict between Danny and his mother for many years. However, despite having the right to take the steps to change the university that he attended, he did not apply to the other university. During our interview I asked who supported him in selecting a college and he stated that, “I can say my parents, but I wanted to go to [the state college] and she went behind my back and put me into [the private university]” (Danny, interview, September 24, 2014. I asked him if he was happy with that in retrospect and he stated, “in retrospect, yeah, I am actually happy with it.” His mom later asked for a copy of the recording because she wanted “proof that he said those things for the rest of my life” (Danny’s mom, interview, September 24, 2014. The task of completing the logistics of choosing a college and applying requires significant executive function which Danny’s mom handled for him. Because she handled all the steps, he ended up registered for a university that he did not want to attend, which caused significant conflict within the family for many years. However, he never took the steps to transfer to another university. Even though he was able to engage in self-determination to decide
to transfer schools, he never actually completed the steps requiring executive function skills of actually completing the paperwork to make the change that he desired happen.

When I asked Victor’s mother if she had provided any support for registration, financing, and other logistical steps in enrolling in college, she stated, “I did it all” (Victor’s mother, interview, September 17, 2016).

Coursework. Jimmy has significant support for completing homework and studying course content. For example, his mother would either read his history chapters to him or she would listen as he read them out loud. Significant support was provided as Jimmy wrote papers as evidenced by his mother’s statement about her support versus Jimmy’s skill level, because his dad and I were good writers that we were able to kick in and help him at it because had we been trying to do it based on just what he got from high school [she shook her head to express her dissatisfaction with Jimmy’s high school preparation for writing papers] (Jimmy’s mom, interview, August 17, 2016).

Jimmy’s mom provided a physical cue to keep Jimmy on track during assessments. He took his assessments in a small room in the library. During the previous semester, Jimmy’s mom sat next to him while he tested. She explained,

usually, even if they allowed me to come in and prompt him for every ten minutes, I’m not usually just sitting right in the room with him, which the math teacher had me do, somehow me sitting by him was a constant reminder that he needed to hurry up (Jimmy’s mom, interview, September 14, 2016).

This semester, Jimmy’s mom generally sat outside the small room and checked on him every ten minutes or so. She stated, “… I would give him every ten minute prompting and that’s about all he needed” (Jimmy’s mom, interview, September 14, 2016). While taking a history assessment,
she explained her role as “I’m outside in the library, but I kind of knock on the door every ten minutes just to prompt him along” (Jimmy’s mom, interview, November 16, 2016). Her primary concern was that Jimmy would get stuck answering a question and would sit there for ten minutes or more without completing any work on the test. Jimmy’s mom did not anticipate that Jimmy would have been able to complete the assessments successfully without the support of someone checking on him periodically. She stated, “I don’t know where he would be if I didn’t, I don’t really want to know for sure” (Jimmy’s mom, personal communication, November 16, 2016).

Danny completed his coursework independently during his first year in college, until he nearly failed a course. His mother then hired a tutor who primarily supports him with structuring and planning his studies. She shared how she supported him with a paper,

one of the last papers due was, I think it was a 20 page Victorian history paper, and he had done like about half of it before, about a week before, so he, he’s really gotten the idea down that if we do an outline, then here’s your rough draft, and then let’s do a final copy, and a lot of times with the final copy he might e-mail it to me, so I can take a look, um, and I guess it’s mostly, it’s not content, it’s most just grammatical and breaking up his sentences, he tends to ramble in sentences, like, they’ll be two pages long, um, and so just getting him to just go back and take his time to look at himself, I’m trying to push him to self-edit, um, so I’ll say, you need to look at these three things, but I won’t tell him where it is, that way he has to go back and do it again, he’s gotten a lot better (Danny’s tutor, interview, January 15, 2017).
The tutor supported him with planning his paper and writing drafts, as well as editing his work. She functioned as a teacher by identifying types of errors that needed to be corrected without specifically pointing them out. Danny did most of his studying alone in his room at home.

Danny waited until late in the semester to meet with the disability coordinator and to set up his accommodation. The only accommodation he had was to have a peer note taker. His disability coordinator stated, “... we set up some note takers at that time ... I made a note he was in a hurry to finish up the appointment” (Danny’s disability coordinator, interview, December 1, 2016). He completed his assessments without any accommodations.

Victor completed his coursework independently in his den in the basement of his family’s home. During an observation, he worked through an online chapter for an economics assignment. I wrote in my observation notes, “to unlock the practice quiz for the chapters, he has to do the review section. He hates that constraint” (observation, February 11, 2017).

Victor is a true lover of learning. He enjoys learning enough that he will go further than the required content if a topic interests him. In the process of exploring topics of interest, he has gained significant factual knowledge of various topics. During the first interview, Victor spoke about investing in dividend stocks, the difference between French and American sign language, U.S. monetary policy, and trivia regarding serial killers (Victor, interview, September 17, 2016). During subsequent interviews, he discussed a multitude of topics at depth.

If interested, Victor would learn extensively about a subject. However, if he was disinterested, it was a struggle to get him to muddle through a class or an assignment. In the past, his disinterest in a class led him to either drop the class or to just neglect the class and fail it by default. His intelligence was constrained by his inability to do something that he had decided
that he is not interested in doing. His mother laughingly shared, “… he didn’t pass all of his
college courses, but he’s really up on current events” (DDC, interview, December 10, 2016).

Often, the path to failure is built for Victor with compounding problems, similar to a
snowball effect. I asked Victor if he had failed any classes, and he replied,

yeah [slowly], quite a few, I’d say, because a lot of them it’s like, I get into it, I once I
lose interest or just start being distracted because it’s not like I thought it was, it’s really
hard for me to remember the information I need to, and focus when I need to, and it ends
up with a just a cumulative problem of well, I didn’t do that well on this test, so now the
next test is already coming up, and I’m already behind on the fundamental concepts that
should be building into these higher concepts, so I’m even worse off, and so it just
becomes a compounding problem of me being further and further behind until eventually
it just is unrecoverable (Victor, interview, September 17, 2016).

Study Skills. Jimmy’s mom acted as his executive function by planning his assignments,
understanding syllabi and online support programs, and clarifying issues with some professors.
At the beginning of the semester, she stated that she had already logged in to Blackboard, the
online course management system used by the university. Her statement supported her role in
initiating inquiries into the specific requirements of each course. She stated, “I glanced at it, just
to see if she had set up Blackboard, and I think there were just some introductory things for next
week” (Jimmy’s mom, interview, August 17, 2016). His mom clarified her role in adding
assignments to their study schedule when she explained that a project for the online class had not
yet been added to the schedule. She stated, “maybe it’s a questionnaire about the assignment
itself … or something, we haven’t looked into a lot yet, have we, [Jimmy]?” (Jimmy’s mom,
interview, October 12, 2016).
Jimmy’s mom’s support in planning and organizing his academic work was evident during the semester when she discovered something of which she was not aware. On one occasion, we were discussing the group project for Jimmy’s history class. Jimmy was explaining the steps for joining a group and mom said, “so you go online and sign up for your group? You might want to tell me about that?” Jimmy answered, “yeah, yeah,” to which mom replied, “yeah, ok, so we can figure that out” (Jimmy’s mom & Jimmy, interview, October 12, 2016). On another occasion, Jimmy shared that his history professor would give some answers to the test during the last class before the assessment to which mom replied, “that’s the first I’m hearing of this!” (Jimmy’s mom, interview, November 16, 2016). As she listened to his reply, I could imagine her making a mental note to remember to ask him what questions had been given out when he was preparing for the next history test.

Danny’s mother shared how study skill struggles led to the need for a tutor. She said, he struggled, that’s why I had to hire the tutor, that’s why I had to hire the tutor, his organization skills are poor, uh, keeping up is poor, you know, his, he can have such tunnel vision on what he likes, and, and, really ignore what he doesn’t like, and still tends to think that oh, I can get that done in an hour, I can get that done in an hour or two (Danny’s mother, interview, September 24, 2016).

Danny’s executive function difficulties led to failure in a course during an earlier semester. With the support of his tutor, he has managed to successfully complete his courses and mid-way through his third year of college was considered a sophomore.

Victor’s mother commented on how his level of necessary support had decreased over the years. She stated,

so far this semester, like I said, it’s been much better, because he’s getting things done
and not, not so many, I mean in the past I’ve gotten e-mail frequently, because his routes into mine, um, but I’ll see the e-mails frequently saying why was this not turned in? I never got anything for this? and I haven’t seen that once this year, so that’s a big plus (Victor’s mother, interview, October 8, 2016).

However, during both of the sessions that I observed Victor completing online coursework, he logged in to the online course and then was surprised that there was a test or an assignment due. During the first observation, I wrote in my notes that “he logged on and was surprised that a test was due that night” (observation, February 4, 2017). During the second observation, he stated, “good thing I logged on today, because those weren’t here yesterday” (observation, February 11, 2017). Victor completed his coursework independently, but his mother continued to monitor his e-mails daily to ensure that there were not any missing assignments for his classes.

Time Management. Jimmy and Danny needed significant support with time management, something that emerged from the data as the need for a zeitgeber, a cue to keep up with the pace of a course. Jimmy’s mom acted as Jimmy’s zeitgeber in ensuring that he stayed in sync with the demands of his courses. Jimmy’s mom was aware of her role, as she explained during an interview, “you might be a little behind if I didn’t help you keep up with all the due dates, and stuff … I think you might forget a few things” to which Jimmy answered, “Yeah, I might, yeah” (Jimmy’s mom & Jimmy, interview, November 16, 2016). Jimmy’s mom offered an example of how she supported him regarding study time with the following statement, “I think that we did attempt to spread a lot of that out as best we could. Some days we’d just do about an hour of work … or a couple of hours’ worth, especially with the big papers to … spread that out, because I think that if completely left to his own device, I’m not exactly sure how he would have managed the time” (Jimmy’s mom, interview, August 17, 2016). It is evident in the
data that without his mother’s support, Jimmy would not have be successful in college. At times, she has had to ensure that he adequately prepares for assessments. When describing the preparation process for an online interpersonal communication assessment, Jimmy stated, “… last Friday I spent seven hours on communications” (Jimmy, interview, November 16, 2016). Jimmy’s mom’s statements supported the unlikelihood of Jimmy initiating and engaging in rigorous studies if left to his own accord.

Jimmy’s mom’s role as a zeitgeber included ensuring that Jimmy was able to follow his passion, which was watching college and professional football. When describing the difficulties he had with assignments that were due on his busy days of Monday, Tuesday, and Wednesday, Jimmy’s mom stated,

I think math is the really hard one and then sometime with history, it falls so you have to read a whole chapter between Monday and Wednesday and it’s a little hairy and he likes to either read up front or be read out loud to, and you know, it takes a little time to do, … but tell her what your big schedule conflict is right now you have to work around? (Jimmy’s mother, interview, September 14, 2016).

and Jimmy answered, “football” (Jimmy, interview, September 14, 2016). The importance of the preparation was evident when he continued studying on two Sundays, the day Jimmy typically watches the program The Red Zone, a program that reviewed all of the relevant plays in each NFL game of that day. This was a program that was important to Jimmy and Jimmy’s mom general tries to work around his football schedule.

Danny’s mother shared how he struggled with non-preferred subjects and how it was necessary for someone to keep him on track regarding assignments. She said,
It’s all the stuff he doesn’t like, he has a real problem getting through something that is boring or mundane, things that are required to get to the things he enjoys, he can’t muddle through that without constant support and prodding (Danny’s mother, interview, December 30, 2016).

Danny’s tutor provided support for Danny with courses and coursework that he did not like or was not interested in. She supported and prodded him and gave him cues as to timing. Danny’s tutor shared how she helped him structure his studies. She described an experience helping Danny as, “let’s write down the due dates for each of them, so we can focus on what comes first, he did a really good job about doing a little bit for each one” (Danny’s tutor, February 15, 2017). Danny explained her support as what we do is we go through all my classes and afterwards we basically, she helps me make a plan of what I need to do to keep on track … sometimes I do need to have a bit of a crash course on the materials, so sometimes she does help me out with that (Danny, interview, September 24, 2016).

During a later interview, I asked Danny what he did during his weekly meeting with his tutor. He stated, “we just go over assignments, she mostly just keeps me, she mostly just keeps me on a good schedule, that’s all” (Danny, interview, November 19, 2016). Danny’s mom discussed the level of support needed to ensure that Danny completed non-preferred assignments. She said, “he hates writing papers … he needs her to prod him to do that, too, to write that … to get started, to get his sources together and do all that preliminary work” (Danny’s mom, interview, December 17, 2016). Prior to having a tutor as a support for these issues, Danny was failing and was placed on academic probation. With the support of the tutor, he completed the semester with passing grades in all five of his classes.
An analysis of Victor’s data only provided one statement that I coded as zeitgeber. In an interview, I asked his mother how he was handling the pressures of college, such as keeping up with assignments and studying. She replied,

so far this semester, like I said, it’s been much better, because he’s getting things done and not, not so many, I mean in the past I’ve gotten e-mail frequently, because his routes into mine, um, but I’ll see the e-mails frequently saying why was this not turned in? I never got anything for this? and I haven’t seen that once this year, so that’s a big plus (Victor’s mother, interview, October 8, 2016).

However, on both occasions that I observed Victor engaged in his online coursework, he was surprised by an assignment that he did not realize was due on that day. During the first observation I wrote that “he logged on and was surprised that a test was due that night” (observation, February 4, 2017). During the second observation a similar thing happened. Victor said, “good thing I logged on today, because those weren’t here yesterday” (observation, February 11, 2017). Victor’s deficiencies in executive function continued to impact his college experience. After four years, he was able to manage despite his deficiencies, as he was able to pass both of his courses during the semester of the study. However, his mother continued to monitor his e-mails on a daily basis to ensure that he did not completely miss any assignments.

Communication. Each of the parents of students in the study monitored their son’s e-mail. Victor’s mother stated that, “I check his e-mail every day” (Victor’s mother, interview, December 10, 2016). She whispered when she made the statement, as if it was something that she did not want Victor to hear. Danny’s mother was describing a social interaction that Danny was engaged in and stated,

I know that he lent him his charger, and then he sent him, he forgot to get his charger, I
read his e-mail, he said, hey, when are you going to be on campus and you can get that back for me and he said of course, and they met up and did that (Danny’s mother, interview, December 17, 2016).

Jimmy’s mother regularly checked Jimmy’s e-mail to ensure that he did not miss any information from the university. During the course of the study, I communicated with Jimmy via his college e-mail. While each e-mail was signed by Jimmy, it is quite likely that his mother crafted a majority of the e-mails.

Jimmy’s mother also interacted directly with his professors at times to clarify details regarding assignments. She was encouraged by their support, stating “… they have been willing to repeat some things to me, nobody has been like, oh, I can’t talk to you” (Jimmy’s mom, interview, August 17, 2016). The professors were not breaking any student privacy rules as Jimmy had signed the document stating that his professors may speak to his mother about his coursework (Jimmy’s mom, interview, August 17, 2016).

Jimmy’s mother also coached him as to how to interact with peers regarding group assignments. She stated,

so I kind of helped Jimmy walk through it and sat down with him and had him e-mail the other group members and let them know where he was … I kind of sort of helped him seem … when you are doing something as a group, let your group know what you’re doing, and what you have done so far, and so kind of helped him at least from his end of the group project (Jimmy’s mom, interview, August 17, 2016).

There is a tension evident for Jimmy’s mom with Jimmy gathering information on his own.

When discussing a meeting about a group project, Jimmy’s mom said,
I’m going to attempt to hang back first, and then if it doesn’t look like he’s following what’s going on, I might try to, to kind of sneak in a little bit, just so I know what he needs to do (Jimmy’s mom, interview, November 1, 2016).

At other times, Jimmy’s mom intentionally let Jimmy interact independently. She stated, “… I’d probably talk to [his history professor] more, but I’m trying to hang back and let him” (Jimmy’s mom, interview, October 12, 2016).

Support for executive function through an epistemological lens. Jimmy’s experience in postsecondary education focused solely on the learning of course material and the demonstration of his knowledge of that material. All of the supplementary tasks required for college, such as registering for classes, communicating with the university, and structuring his study schedule were completed either with the full support of his mother or completely by his mother. When considered under an epistemological lens, Jimmy completed college through the lens of a traditional epistemology. The goal of college for Jimmy was to obtain course credits and to graduate. However, when considered through a postmodern lens, the college experience has the potential to develop many other skills above and beyond simply completing coursework. Danny and Victor each engaged in a varying level of tasks requiring executive function.

Impact of executive function on self-determination. Self-determination is the process by which students with disabilities engage in behaviors that manage their lives. The process of securing special education accommodations requires students to advocate for themselves and to follow through with logistical steps. Deficits in executive function can be a barrier to those supports as a student must fulfills the step that are required of him. Danny’s mother was concerned that the disability coordinator would not continue to provide support after Danny did not follow through with an appointment. She stated,
I wonder if she is going to come back and say to me, well, he has to do that part? … you know, he has to come and, but I want her to e-mail, make sure she e-mails all his professors those letters, but I don’t know if she will or not (Danny’s mother, interview, September 24, 2016).

Danny struggled with following through with tasks that he found to be irrelevant or boring. His mother was concerned that his neglect to follow through with the disability coordinator would lead to him losing his accommodations. She was limited regarding her ability to advocate for him directly with the university as Danny had not signed an agreement releasing her to speak with the university on his behalf.

The most significant impact of deficits in executive function on self-determination was evident when Danny dropped a class that led to his losing all of his university funding (with the
exception of loans) as previously described. Danny was told by the registrar’s office that the consequence of going from full-time to part-time enrollment would lead to a change in his eligibility for financial aid. According to his mother, the bursar’s office believed that Danny fully understood the consequences of his decision. However, Danny did not realize the consequences of his decision and had his mother not intervened and coordinated a solution with the disability coordinator, Danny would have had to sit out the entire semester for financial reasons.

Victor has changes majors multiple times. He stated,

It’s been about four years of me just hopping back and forth between degrees, I see a job that sounds like it could be fun, then it’s either, it ends up being not as interesting as I thought it was going to be, or I end up not finding out that job’s not available in [this state] (Victor, interview, September 17, 2016).

Victor had inflexible requirements regarding his participation in society after graduation. He refused to work an unpaid internship which ruled out completing an engineering degree, while his desire to have no contact with bodily fluids ruled out a biotechnology career. Victor’s mom would like to have had more complete information that would have allowed her to guide Victor’s decisions. She said,

I think there needs to be, well, either more education or at least an advisor for kids that have those kind of conditions so there is more of an understanding, because what he would run into, he’d say, I want to do this and he’d start to do it, but it wasn’t until he had been doing it for a while that he finds out these are the things that are going to be required, because there is nobody there to tell him that … but for kids like him that was a total block to him finishing that, so he changes his whole major” (Victor’s mom,
The logistics of certain degrees were simply more than he could tolerate. For example, Victor’s mother explained that for the engineering degree,

he was required to do it at [a specific company] and that had nothing to do with what he has to do or how he wants to do it … and he’s like no, no, that’s a waste of my time, for him that was, and it is forcing him into a situation that was not going to even be something he would ever be employed in because he couldn’t handle that” (Victor’s mother, interview, November 12, 2016).

**Impact of executive function deficits on emotional control.** The students with autism in this study were likely to take their frustrations out on their mother as a scapegoat. Often, when Danny was frustrated with something outside the home, he took it out on his mother. His mother described how he tended to take out his frustration on her, “I think that life at home gets a lot worse when he hates a class, and because I think he takes it out on me, you know, he will definitely tell me everything he wanted to tell the teacher” (Danny’s mother, interview, November 19, 2016). Danny redirected his feelings of frustration about school to his mother when he disliked something or a situation, something that his mother perceives to be partially due to his immaturity. She stated,

I see him as four to five years younger than he actually is, so when you think about that … he’s 20, but if developmentally he’s only 15 or 16 … they want the world to be very simplistic, they’re not ready to … be a full adult with full adult responsibilities” (MM, personal communication, November 19, 2016).
While Danny’s mother did allow Danny to take out some of his frustrations on her, she was not a passive recipient for his anger. Danny’s mother was feisty and was likely to push back when he was angry with her, leading to a conflict-ridden home life.

Danny’s mother was discussing how her son is sometimes frustrated with certain aspects of his job. She said, “I mean, he complains sometimes, but [he] can be a very big complainer.” She discusses how his disposition can vary and that recently “he had a really good day, he can be very horrid, he can be very negative and very horrid” (Danny’s mother, interview, September 24, 2016). For example, during his initial meeting with the disability coordinator, Danny “wasn’t in the mood to meet with her” (Danny’s mother, interview, September 24, 2016). Not surprisingly, the meeting did not go as well as it might have if Danny had been more cooperative. In some cases, such as when he was unhappy that his tutor was coming or when he forgot which day I was coming and had to meet with me when he didn’t want to wake up, he managed to pull it off and meet with me. Danny was developing the skills to tolerate something he did not want to do. However, when he did grudgingly comply with a pre-agreed upon commitment, he then was likely to take out his frustration on his mother.

A significant theme that has emerged regarding Victor’s experience in postsecondary education was his experiences with failure. Victor had internalized the likelihood of failing. When describing his plans for opening a home-based exotic animal breeding company, he rationalized the decision based on the likelihood of him failing in his other pursuits. Victor said, “I figure if I fail everywhere else, I can at least help [my brother] out” (Victor, interview, September 17, 2016). Living at home and running a business out of his house with his brother would certainly be within Victor’s comfort zone.
The most essential time that Victor needed support was when he started to become disinterested in a class. Mom shared that he developed strategies for handling interaction, but that it came down to, “… whether it was something that fulfilled his expectations, which if he didn’t his interest level would drop significantly, whether he thought he should have to be doing it at all would affect how well he did” (Victor’s mom, interview, September 17, 2016).

When describing the sexual harassment training that Victor received multiple e-mails about, but refused to participate in, his mom was supportive even though he did not make the decision that she wanted him to make. She said, “…. they keep saying you have to take this … well, you quit your classes if you don’t like them, I guess you can just not take this and we’ll see what happens, nothing ever did” (Victor’s mom, interview, November 12, 2016). So even when Victor did not comply with what his mom wanted him to do – in this case she wanted him to take the online sexual harassment training that was being required for all students – his mom continued to be supportive of him in general.

**Go outside of the box.** The level of support necessary to support the executive function struggles of students with autism required disability coordinators to involve the family in the postsecondary experience for students with autism more often than for students with other disabilities. Each of the students in this study had significant support from a parent that was beyond what was typically expected for a college student. The theme *go outside the box* had powerful implications for students with autism going to college. It was used in a conversation with the disability coordinator at the community college when she was explaining the need to address parental involvement in a way different than how it is addressed for most college students, including those with other disabilities. College was seen as a time when students are expected to self-advocate. Due to privacy laws, university faculty and staff were limited as to
what they could discuss with parents of students. However, students with autism, on the whole, needed the support of their parents (generally their mother) in negotiating postsecondary education. The disability coordinator at the community college, stated,

> with autism, that’s the one disability where we kind of go outside the box a little bit and have more parents involved than we do … they tend to do ok once they are here for a little bit, but we have much more parental involvement at the front door, usually when it has to do with autism (interview, August 24, 2016).

The community college disability coordinator explained that although they do try to communicate with the student as much as possible, it is beneficial to have communication with the parents. She explained how she encouraged this communication to take place in a way that not only allowed for communication with parents, but also satisfied the privacy requirements. The community college disability coordinator stated,

> it’s kind of like we go outside that box with them, although we try really hard to communicate with the student and as much as possible, I like the filter to be the e-mails, because then I have the protection of it coming directly from the student, and I always tell parents, they don’t have to have autism, I always tell them, you know, whatever you need to do is between you and your kid, and if you want to hold a gun to their head and say we’re going to send an e-mail, that’s fine, I’ll answer the e-mail if it is coming from that e-mail account, you know, but if you call and I don’t have permission to talk to you, I can’t, and they go, and they get mad (interview, November 23, 2016).

The disability coordinator suggested that parents gain access to the school e-mail account for students with autism so that communication seemingly takes place with the student, but could very well be written and sent by a parent. Suggesting that parents use the student’s school e-mail
account is one way that it was possible to go outside the box in support for students with autism.

The disability coordinator at the private university offered significant support for students with autism. She tried to meet with students with autism weekly as they started college. That level of support is continued all through the college experience for some students. Having regular meetings with the disability coordinator was one thing she had found beneficial for a majority of students with autism. The private university disability coordinator stated,

they need a touch point … it’s more about, um, executive planning, executive functioning, planning, using a planner, how to plan for college, how do they handle when they are assigned to a group to do a group project, how do I communicate with my instructor when I really don’t know what they are talking about … maybe we sit down and construct an e-mail together because they have a question about, for their instructor and don’t know how to approach them (interview, October 13, 2016).

There are limits to the level of parental support allowed by the university. Jimmy’s mother asked if she could attend class with her son to support his note taking, but was told that she would not be allowed to attend class with him.

Professors were unwilling to speak directly with parents without documentation from the student allowing that to happen. Danny’s mother described a situation in which Danny was failing a class and she tried to call and speak to his professor. She stated, “she refused to speak with me … she would only speak to [the disability coordinator], she absolutely refused because I don’t have guardianship and he hasn’t signed the paper giving me permission” (Danny’s mother, interview, October 15, 2016).

Students with autism needed a level of support in college that was greater than the needed support for other students. The need for support for issues of executive functioning was directly
cited by the private university disability coordinator.

**Uncertainty.** There is considerable uncertainty about what will happen to the participants in the study after graduation. Jimmy’s mother was discussing Jimmy’s goal of completing an associate’s degree and, “not really worry about beyond that just yet” (Jimmy’s mother, interview, August 17, 2016).

The mothers of each of the three participants anticipated that their son would need significant support after graduation. Victor’s current plan was to start a home-based business breeding exotic animals with his brother. The business would be run from his family home. Uncertainty about his future has been ongoing starting with middle school when the administrators of the middle school did not anticipate that he would be able to handle high school. Victor had concerns about his ability to complete college. He stated that he had a, “constant sense of dread of what happens if I mess up … it’s several years of my life devoted to maybe earning a living wage afterwards, by the time I’m middle aged and I’m actually out of college” (Victor, interview, February 11, 2016). Victor had an understanding of the type of support that would be necessary for him to live outside of the family home. He stated, “moving on my own would be difficult, I’d have to be like married with somebody who could tolerate me and then go out with them, because alone, I don’t function that well” (Victor, interview, September 17, 2016).

Danny’s mother was discussing Danny’s room and how messy it was. She was concerned that he may never be able to live independently. Danny’s mother stated, “how can he live, how can he even have a house, if one little piece of my house looks and smells like that does” (Danny’s mother, interview, September 24, 2016). When Danny made the decision to drop a class leading to the loss of his financial aid, his mother said, “it’s what finally got me to
put him on the [state Medicaid waiver waiting list] (Danny’s mother, interview, September 24, 2016). For Danny’s mother, this action by Danny led her to accept that he was going to need considerable support as an adult and drove her to begin the steps to gain access to support services for him as an adult. The level of support anticipated for adulthood is difficult to gauge for high functioning students with autism. Danny’s mother stated,

the problem with a high functioning one is that they are on that, you know, if he was a lot lower, I would be like, we need to go to disability … but then he’s at that high level where it’s like, you think he can do it, but can he do it, you know, I don’t know, so I’ve always been like that, I don’t know, I don’t know, I don’t know, it’s always been like a crap shoot sometimes (Danny’s mother, interview, December 17, 2016).

When subsequently asked what would happen after college, Danny’s mother answered, “sometimes it’s just too scary to think about.”

The level of uncertainty faced by parents regarding their student with autism may lead them to be more protective than necessary. The disability coordinator at the community college stated that 25% of the parents of students with autism, “… are not going to be disengaged no matter how hard we try” (NB, interview, August 24, 2016). Jimmy’s mother had mentioned several times that she was over-protective of Jimmy. Jimmy’s mother stated,

I’m so used to kind of spoiling him rotten, you know, so I think he probably is capable of more independence, but there are certain things that if I weren’t here, I would be a little bit worried about how he would manage and things like that … I do tend to take a little bit too much of care of him, and he probably is capable of a lot more (Jimmy’s mother, interview, December 7, 2016).

Victor has become more independent regarding study habits over the years. His mom shared that
he is improved, I mean what I’m seeing this semester is a big improvement over the previous ones … just keeping up with things, and being more concerned about what the grades and stuff are, because you know like, we’ve talked about before, a lot of times, if it was something that he was not seeing the benefit of as he got on into it, he’s just like, forget it, I’m not doing this anymore, and he’d either quit doing it, or quit worrying about what the grades are, just you know, and even though he’s questioned a little bit the need for some of what he’s doing, he still have persisted, which is good (Victor’s mother, interview, November 12, 2016).

At the beginning of his college career, Victor required significant support. His mom stated, “… you never e-mailed one single teacher … you never had a conversation with one, unless I enforced it, I went with you to talk to the disabilities lady, I went with you to talk to everybody” (Victor’s mom, interview, February 11, 2017). Victor’s ability to function independently at school has led to his mother being able to gradually release support. While he would have preferred that his mother accompany him on trips to campus to meet with advisors, he could complete the tasks independently. Victor’s mother stated,

if I can go and drive him, he’d rather me do that if he has to go to campus for something, but if he has to go, he can, he’ll do it, and four years ago, that wouldn’t have happened (Victor’s mother, interview, February 11, 2017).

Monitoring of Victor’s college e-mails was a way that Victor’s mother has remained in tune to how Victor is keeping up with school. While mom implied that she had stopped monitoring his e-mails, “… in previous years, up to and including some of last year, I monitored his e-mails, too” (Victor’s mom, interview, September 17, 2016), in a later interview she confessed in a whisper that she continues to check his e-mail daily, “I check his e-mail every day … and I
usually tell him … I’ll say, it looks like you got an e-mail from your professor, what’s it about?” (Victor’s mom, interview, December 10, 2016). Checking his e-mails was a check on Victor’s struggles with organization and executive function. By monitoring e-mails, mom watched for inactivity and could nudge him back on track if he needs that support, before a situation escalated into a compounding problem and led to course failure. Over the four years that Victor had been in college, his mom had gradually released support regarding e-mails. Early in his college career, “I did e-mail and put your [Victor] name on it” (Victor’s mom, interview, September 17, 2016). Gradually she was able to support him as he drafted his own e-mails. Victor stated, “we’ll [mom and he] go look up their … e-mail addresses and try to get ahold of them” (Victor, interview, October 8, 2016). At a later interview he stated, “I … have mother help me like word an e-mail” (Victor, interview, February 11, 2017). On another occasion, Victor’s mom described his increasing ability to self-advocate,

this year, I haven’t had to e-mail any of them for him … there have been a lot in the past, it’s definitely getting to where he is much more comfortable with it, whether it’s the professor being better, or he’s just more articulate and able to explain what he doesn’t understand or need … it’s been much better (Victor’s mother, personal communication, October 8, 2016).

However, despite Victor’s emerging ability to manage his own college experience, his mother continued to check his e-mails daily indicating his need for support in areas of executive function.

The level of support provided for executive function did not impact the anticipated uncertainty for the future (Figure 5). The three students received varying levels of support for
executive function, yet each had a high degree of uncertainty regarding independent living and self-sufficiency after completion of a postsecondary degree.

Figure 5: Relationship of level of support with level of uncertainty

Deficits in executive function permeated the entire postsecondary education experience. Male students with autism had significant support for varying aspects of executive function. Self-determination was also impacted by executive function. Finally, male students with autism completed postsecondary education with uncertainty about the future, something that was significantly impacted by deficits in executive function.
Assertion 2: Comorbid mental health disorders have an impact on the experiences of male students with autism attending postsecondary education. Each of the students in the study had a comorbid mental health disorder. Jimmy and Victor had obsessive-compulsive disorder (OCD). All three students had significant anxiety. Danny sometimes suffered from periods of depression.

Each of the students demonstrated behavior changes in relation to comorbid mental health disorders. Jimmy demonstrated greater anxiety at the beginning of the semester and during times of high stress. However, for a student who had lost the ability to get his own snacks at home, he handled the stress of more than six hours of continuous testing during the finals with the only evident impact being an increase in tic behavior. Danny improved in his ability to manage the demands of postsecondary education. Victor also improved. His mother stated, “We’ve got much less pacing, we used to talk about, seriously, before work or before school, it would be pacing, pacing, pacing back and forth in the house” (Victor’s mother, interview, October 8, 2016). Victor’s mother credited some of his improvements in mental health to Victor having adjusted to the routine of college and work. Victor’s mother stated, “we would be getting dressed hours before we had to be there … now… it’s just more of a routine, it’s not as threatening” (Victor’s mother, interview, December 10, 2016). Improvements continued over time. Victor’s mother reported, “we haven’t seen those kind of things coming through this time, which we have in the past, so he’s doing good” (Victor’s mother, interview, February 11, 2017).

Mental health concerns had significant potential consequences for the students in this study. Danny discussed the impact of pressure on him emotionally. He described his mental state while working on four papers that were due soon as, “extremely stressed … it made me irritable” (Danny, interview, December 17, 2016). Danny’s mother is aware of the limits of how
far she can push Danny without a mental health impact. Danny’s mother stated, “I was a little worried about him, because I know how he can decompensate, and I was afraid that was going to happen” (Danny’s mother, interview, December 30, 2016). Victor’s mother also expressed concerns regarding the consequences of the impact of mental health on independence. During the course of the study, Victor had a car accident. His mom was concerned that the accident would lead to him refusing to drive. Victor’s mental health also has an impact on his intentions for living arrangements after college. He does not intend to live out of state and would prefer to continue living at home because he has too much anxiety to consider living outside the home.

Victor described the consequences of the impact of mental health resulting from pressure to succeed. Victor stated that there would be significantly less pressure in college if it were not something that he had to pay for. Victor stated,

if it was free, paid for by my tax money so I could go as long as I wanted and do what I wanted there with regards to my performance, I’d be a lot more comfortable with it, because there would be very little pressure, because it’s like, if I mess up, there’s no, the only thing I lost was time … I can’t retake these classes because I failed, you know, there’s no existential crisis surrounding it (Victor, interview, February 11, 2017).

Each student in the study was insulated from the pressure of college by virtue of the support person carrying some of the responsibilities of college. Jimmy was the most significantly insulated to the point when asked if he felt any pressure, he answered, “I don’t feel the pressure” (Jimmy, interview, August 17, 2016). Jimmy’s mother shared how she absorbed the stress regarding a frustrating situation about an online course. Jimmy’s mother stated, “I was so mad … of course, Jimmy just laughed at me” (Jimmy’s mother, interview, December 7, 2016). Danny’s mother described her tension of balancing Danny’s needs for insulation from
mental health concerns and her realities as a working single mother. She described a situation where he lost his wallet and called her in a panic. Danny’s mother stated,

it has to be a real emergency, it can’t be an emergency in his head that’s not an emergency to the rest of the world … I have to be able to talk him out of emergencies that are in his head (Danny’s mother, interview, December 17, 2016).

Danny’s tutor attempted to protect him from feeling overwhelmed from assignments. She stated that she explained to Danny,

let’s do a list of things, by next week have this done, and we try to make it balance so he doesn’t feel overwhelmed, and we just do something for each class, if it’s necessary, you know, some classes they don’t have weekly things, I’m one of the few adults, I think, he’ll listen to (Danny’s tutor, interview, January 15, 2017).

Frustration could lead to the participants in this study being abruptly inflexible and shutting down. Danny was frustrated with the procedures for arranging for accommodations for testing from the disability center. He was told that he had to request the accommodations three business days before the test and he was frustrated that the requirement was not three calendar days. Once Danny was frustrated with an aspect of an issue, it was difficult for his support person to get him to focus on the primary situation, which was that he needed to request accommodations in a timely manner from the disability coordinator.

Danny was also frustrated that a teacher he did not like was the only teacher offering a class that was required of his degree. Danny stated that she was, “bad because in general she was a bad teacher and when you are the only teacher … you are kind of free to do as bad a job as you want” (Danny, interview, September 24, 2016). It seemed that one reason that he did not like that professor was that she was the only professor who taught that class.
Both Victor and Danny tended to be abruptly inflexible when faced with something they do not want to be doing. Victor’s mother described that,

if it was something that he was not seeing the benefit of as he got on into it, he’s just like, forget it, I’m not doing this anymore, and he’d either quit doing it, or quit worrying about what the grades are” (Victor’s mother, interview, November 12, 2016).

Danny’s mother had an equal concern for Danny’s reaction when he was not interested in something.

Jimmy manifested his frustration through increased demonstration of mental health issues. At the beginning of the year, he demonstrated more anxiety about school, something that resolved by the end of the school year. However, pressure triggered frustration in him at the end of the semester. When studying with his father for a math final, he lost his patience. However, he later apologized to his father.

Sometimes Danny had the propensity to be oppositional. He stated, “I don’t like being told what to do at all” (Danny, interview, October 15, 2016). From this statement, it did not seem to matter what the context was, but that he simply disliked being told what to do. Being told what to do triggered a fight or flight response from Danny; at home he tends to fight, while at college, he is more likely to escape the situation and take the fighting feeling out on his mother.

There is tension for Danny’s mother regarding Danny’s mental health concerns. His mother stated, “I was a little worried about him, because I know how he can decompensate, and I was afraid that was going to happen” (Danny’s mother, interview, December 30, 2016). However, Danny had to push forward despite of his mental health concerns, partially because his mother simply could not, as a single parent, insulate him from some of the pressures of college.
She had a job, she was a single mom, and she had twin 12-year-old boys to care for. Danny simply had to push forward. There really was not a choice, to a point. His mother pushed him to the extent that he could be pushed – he had a job, he went to school, he went even though he did not want to sometimes. His mom worried that he would never be able to live independently. He was developmentally much younger than his chronological age, and just as a 15-year-old would not think of moving out and being independent, it was not on his radar. He grudgingly accepted the grind that he had been dealt and did what he has to do to keep his parents off of his back. Danny’s mother had guilt that wavered between the desire to allow him more independence and the worry that he would fall hard if he did not have support. Without the support of the tutor that his mom arranged, “he probably would have failed out by now… he needs someone to keep him on track, but it couldn’t be me, too much friction … yeah, he needed her, if he didn’t have her, he would have probably failed out” (Danny’s mother, interview, December 30, 2016). His mom made sure that he had the support he needed to stay on pace and Danny grudgingly complied.

**Assertion 3: Students with autism engaged in postsecondary education are content with their preferred style of socialization.** The male students with autism were each content with their style of socialization and were at times frustrated with forced socialization outside of their preferences.

Each of the students in this study had limited socialization. When asked to describe his interaction with peers in the classroom, Jimmy stated that he said “hi” to someone (Jimmy, interview, October 12, 2016). Jimmy socialized with his family by watching sports games together and going out to dinner. Jimmy had demonstrated that he was interested in more socialization with his peers than what he was currently experiencing as demonstrated by his compliment to a peer during a class. Jimmy’s professor stated that he overheard Jimmy state to a
peer, “that’s a pretty dress” (interview, November 16, 2016). The professor expressed a bit of concern over the statement, but the student did not seem to be bothered.

Victor and Danny had significant contact with peers around the world via the internet, but limited contact locally. Danny had little to say about his classmates and remained generally isolated. Danny stated, “I don’t talk to them much, there are a few of them that are friendly, but I guess I like to keep to myself” (Danny, interview, September 24, 2016). On another occasion, Danny stated, “I don’t like talking to people much at all … I just like to keep to myself, honestly, that’s all” (Danny, interview, December 17, 2016).

Victor has an emerging level of interaction with peers outside of the family. His mother said that this was a significant behavioral change for an individual who was prone to be, “OD’d from human society” (Victor’s mother, interview, November 12, 2016). Near the end of the semester, Victor went out with a work friend and her brother. Victor’s mother stated, “he has gone out a couple of times with … other people, he went out with a girl, but he also, it wasn’t just [the girl] you were with, it was her brother, there’s people in public” (Victor’s mother, interview, February 11, 2017). The following conversation with mom offers insight into their lighthearted relationship and also supports how Victor was moving forward regarding typical young adult behaviors. She playfully told me how Victor has abandoned her for a girl, until he ran out of money, His mom said, “I’ve been giving him a hard time because a lot of, Victor has traditionally done things, mostly with me, we do things together … and his little friend now is interfering with that, she messed with my movie” to which Victor answered, “it was going to be two, but then there’s some money issues that came into it, so me and mother are going to see that movie together” (Victor & Victor’s mother, interview, December 10, 2016).

Each of the students in the study demonstrated evidence that he was content with his
current level of socialization. Victor had an interesting response to a question as to what he considered fun in college. Victor stated, “I’ve met some fairly colorful characters in classes, generally that’s probably one of the better parts are those kind of people you can meet” (Victor, interview, December 10, 2016). This was an interesting statement from a student who had expressed that he did not like people at all and would prefer to do everything necessary in life from home. Victor could also be intolerant of classmates if he felt that they did not demonstrate a sufficient level of intelligence. Victor stated that in a required class a professor asked the students to list the countries on the globe and, “we had people labeling Europe as North America, they just write United States instead of Russia, these were like grown people and it’s like, you’re scoring a 35” to which his mother responded, “he’s intolerant” (Victor & Victor’s mother, interview, September 17, 2016). For the first couple of years of college, he was likely to be found on his computer, sleeping, or watching television shows with his mother, but he was becoming increasingly social outside the home.

Each of the students demonstrated some frustration with forced socialization. Danny was the most frustrated as evidenced by this statement, “certain people think it’s a good idea to let people who like to keep to themselves be forced to talk to people, it’s a bad idea” (Danny, interview, December 17, 2016). Forced socialization during online classes was particularly annoying. Victor stated,

I had to do discussion boards and it was I don’t know, kind of annoying because it was just, oh, I had one class that you were required to participate every week in the discussion board and you were required to socialize with the other people in the class and it’s just, that was painful, because it was the standard stereotypical Facebook style posting, oh, here’s my bright and shiny optimistic view of my life and future and why everything is
going to work out just fine, and it’s like, no (Victor, interview, December 10, 2016).

Jimmy and his mother experienced a frustrating situation regarding online discussions. The students in an online course were required to make posts and the entire class was penalized if there were any posts left unanswered. Jimmy’s mother stated,

each person has to post like 100, 150 word response, and then to, to the other person in the group, you have to reply to at least two of their responses for about 75 word minimum, and she says if you all leave orphan posts, meaning somebody who does, who has a post with no responses, it will take 1 to 2 to 3 plus percentage off the grade … so guess who is the only one who goes back and makes sure there are no orphans (Jimmy’s mother, interview, November 16, 2016).

Jimmy then answered, “touchdown, Jesus!” (Jimmy, interview, November 16, 2016).

Students with autism were encouraged to initiate conversations during meetings with the disability coordinator. The community college disability coordinator stated that when she first met with a student with autism, she encouraged the student to speak for himself. However, when she met with Jimmy, she was concerned because he would not stop talking.

There was some indication of professor-initiated social interaction during class. Jimmy had a math professor who had the students work in small groups to solve problems. She also had the students exchange phone numbers so as to ask questions of each other regarding math problems. Jimmy’s mother liked that pedagogical strategy as it increased the number of students who would speak with Jimmy. She found that the students were then more supportive of Jimmy. She stated, “they all kind of rallied around him a bit and it was helpful” (Jimmy’s mother, interview, August 17, 2016). When discussing their experience with a group project in history class, Jimmy’s mother stated that she would, “…. rather just hang from the ceiling” (Jimmy’s
Assertion 4: Tension surrounds the experience of male students with autism engaged in postsecondary education. The people supporting students with autism experienced tension regarding their support.

Jimmy’s mom experienced tension as she tried to balance his need to engage in society with the likelihood of his mental health disorders further impacting his independence. An example was her intentionality in scheduling his studies. Jimmy’s mom stated, “I don’t want him to become too stuck to a schedule” (Jimmy’s mom, interview, August 17, 2016). During his sophomore year of high school, Jimmy’s OCD led to significant setbacks regarding his independence. Jimmy’s mom stated, “… you used to get your own snacks … once he was a sophomore, he was doing a lot of that, it slowed him down so much that we didn’t even push that because we didn’t want things to get any more [severe]” (Jimmy’s mom, interview, September 14, 2016). In an apparent attempt to prevent Jimmy from succumbing further to the effects of OCD, Jimmy’s mom insulated him from as many stressors as possible, to the point that when asked if he felt pressure from the timing of impending assignments and assessments, Jimmy answered, “I don’t feel the pressure” (Jimmy, interview, August 17, 2016).

After Jimmy made the statement about not feeling pressure, Jimmy’s mom discussed how she tries to reduce the impact of her stress on him. To protect Jimmy, she carried the stress and pressure of as many aspects of college as possible. I wrote an analytic memo about this experience.

The statement that he doesn’t feel pressure is a really powerful statement by Jimmy and it was followed by a discussion by Jimmy’s mom about how she tries to reduce the impact of her stress on him. He is insulated from the stress and pressure. His mom carries it.
However, learning to deal with adversity and pressure is part of becoming a contributing, self-sufficient member of society which is a postmodern epistemology – until I consider my son and mental health. Pressure can be debilitating for mental health. So if the perceived choice is to insulate or to have him shut down, I can see that an insulated experience is better than no experience at all (analytic journal, January 4, 2017).

This led me to reflect on how learning to deal with adversity and pressure is a part of becoming a contributing, self-sufficient member of society, a goal of a postmodern epistemology. But if the perceived choice was to insulate Jimmy so he would not shut down, it was logical that an insulated experience was better than no experience at all. This reasoning helped to understand why Jimmy’s mom was so overprotective with Jimmy. While it caused her some guilt as evidenced by this statement, “he’s spoiled … he’s probably capable of a lot more, but he is so sweet and spoiled” (Jimmy’s mom, interview, September 14, 2016), it was understandable that she did not want him to lose more independence. Jimmy was participating in an experience in college during which his mother was insulating him from stress and pressure; the alternative would have been to have an isolated existence at home.

Jimmy’s professor felt tension regarding the decision to call on him when he raised his hand during class. At times, he did not call on him because he was worried that he would say something that may embarrass himself. However, that seemed to give him some tension as he preferred to call on students when they were interested in participating. Jimmy’s professor stated, “… today I could have called on him at some point, but I went to the girl over here … I’m just afraid number one of what he’s going to say, that might embarrass him … so I’m a little reticent to, even when he seemed willing to engage me” (Jimmy’s professor, interview, October 12, 2016). During a class observation, Jimmy made several requests for additional information
that were socially appropriate. I did not observe him asking inappropriate questions; however, I did feel the tension when Jimmy answered several rhetorical questions. When the professor asked the class if they were ready for the test, Jimmy answered, “Yep, yep” (observation, September 14, 2016). The professor then said to prepare for the exam as if it were not open note and Jimmy answered, “yeah.” The professor then said for the class to have a good weekend to which Jimmy answered, “alright.” Jimmy’s likelihood of answering rhetorical questions is stressful for his professor.

Danny’s mother had tension regarding his need to self-advocate for accommodations and the consequences of him not completing those tasks. During a discussion about the consequences of Danny not following through with the disability coordinator, Danny’s mom expressed her concern that the disability coordinator would not continue to reach out to him to encourage him to participate. Danny’s mom described her thoughts regarding the disability coordinator. She said,

I wonder if she is going to come back and say to me, well, he has to do that part? … you know, he has to come and, but I want her to e-mail, make sure she e-mails all his professors those letters, but I don’t know if she will or not (Danny’s mom, interview, September 24, 2016).

This situation is complicated by the fact that Danny has not signed the release for his mother to communicate with the university on his behalf. His mother stated, “I don’t know that [he] has ever signed it” and she shared a consequence of his refusal to sign the release in a discussion about an attempt she made to communicate with one of Danny’s professors, “I did e-mail that teacher and she would refuse to speak to me” (Danny’s mom, interview, September 24, 2016). Danny’s struggle with executive function, such as following through with the logistical
tasks that allow others to support him, was confounded by his not having signed a waiver allowing his mother to access his records and to speak on his behalf. He became abruptly inflexible during the initial meeting with the disability coordinator and wanted the meeting to end; once he refused to do something, he stubbornly stuck to whatever his decision was. In this case, it led to a barrier for his mother in her attempt to support him when he was failing a class.

During a discussion with the disability coordinator at the private university, she stated, if I had more staff, somebody else to share the load, I think that could be even better, because like, [Danny] is a good example of this, since he no-showed, I, if I had less of a case-load, I would probably be really persistent on saying hey, come back, you need to come back, instead of waiting on him … but my general, what my mode of functioning is I need to way until [Danny] contacts me … unless there is an instructor that calls me or e-mails me and says there is a problem, unless there’s a fire which is not the best approach, but with one office, a one person office, … a lot of times you have to be, instead of being proactive you have to just react, unfortunately (private college disability coordinator, interview, December 1, 2016).

The disability coordinator felt tension regarding her desire to further support students with autism and her constraints of time and staff. She realized that the level of support needed for this population may have required extending beyond the typical boundary of student-initiated services, but she was unable to honor that need as she had a one-person office.

Victor’s mother experienced significant tension with refereeing interactions between Victor and his father. Victor shared an example of how his father had reacted to his behavior. He said, “my father will get like really mad when I start, because I’ll start pacing, and just in general being kind of obsessive and he gets completely wigged out over it, he does not like it”
Victor’s mom explained the differences between Victor and his dad as, “[Victor] is not like him, he doesn’t want to work on the cars, he doesn’t want to work in the yard, he doesn’t want to have fresh air, and he has a hard time dealing with that” (Victor’s mom, interview, September 17, 2016). His mother discussed how she helped Victor to arrange his schedule to minimize time at home alone with his father. She described that if he had to pick up his brother after school, then “he’s up during the day with his dad, so they have time to argue because he doesn’t have time to sleep before he goes to get [his brother]” (Victor’s mom, interview, September 17, 2016). Victor’s mother described another situation during which his dad became frustrated. She said,

he gets very grumpy, but he doesn’t always handle it well, the other day he got really mad at us because he was up doing something timed, we called him and asked him to do something, so then he came up and did it, and then he went back down, and he was short on time, and later on, he comes up, and he’s actually yelling at us because he did badly because it was our fault, and we’re going, you never said you were on a timed test, you never said, and his dad is like [Victor], tell us, tell us, and you could have done this later, his, so then it becomes a screaming match between him and his dad over something that shouldn’t have been that huge (Victor’s mom, interview, December 10, 2016).

His mother continued a bit later in the conversation when it comes to being between [his father] and [Victor] and that’s just being honest and I can say it in front of [Victor] because he knows, um, [his father] is still very intolerant of [Victor], or any quirks, foibles, or anything else that it comes to, and if I correct [his father] in any way, then I’m not on his side, if I say, [Victor], you need to do what I told
you to, then I’m not on his side, and, so yeah, there I get torn, this is ridiculous (Victor’s mom, interview, December 10, 2016).

Victor’s mom felt significant tension regarding Victor’s interactions with his father. Victor’s father struggled to tolerate Victor’s differences and the two of them experienced significant conflicts that inevitably led Victor’s mother to attempt to intervene. This conflict impacted Victor’s postsecondary experience because Victor had to schedule his times that he was awake and studying to work around the times that his father was home.

**Conclusion**

Male students with autism experienced postsecondary education with varying degrees of support for tasks requiring executive function. Comorbid mental health disorders had an impact on their experiences. The students were satisfied with their chosen levels of socialization and were frustrated when socialization was imposed upon them. Finally, individuals providing support to students with autism attending postsecondary education experience tension regarding the experience.
Chapter 5: Implications of the Study

This dissertation used the qualitative research design of multi-case study to examine how three male students with autism experienced the academic, social, and self-advocacy aspects of postsecondary education. The study was driven by the following conceptual framework concepts: entrainment, social capital, self-determination, and disability studies. Data were collected at the postsecondary institution or at the home of the student, the voices of the participants were actively sought, and a complex description of the experiences observed was provided.

The research question for the study was: How do male students with autism experience the academic, social, and self-advocacy needs of postsecondary education from the perspectives of the students themselves, their parents, their professors, their disability coordinators, and their tutors?

Data were collected via interviews with the students, their parents, their professors, and the disability coordinators at their university. Students and parents were interviewed five times over the course of a semester. Other participants were each interviewed at least twice. Additional data were gathered through observations of the students in class, documentation, and course syllabi.

Results indicated that each of the students had support with tasks involving executive function, each of the students had at least one comorbid mental health disorder that impacted his postsecondary experience, and each of the students was content with his respective level and type of socialization. Frustration and a sense of uncertainty for the future permeated their experiences. Finally, individuals providing support for students with autism experienced tension regarding their support.
Implications of the study included the impact of executive function on self-determination and the importance of including families while supporting students with autism in postsecondary programs. Additionally, the study had epistemological implications regarding the level of support and the goal of postsecondary education.

**Executive Function**

What emerged from the analysis was the need for support in areas requiring executive function. Time management is one aspect of executive function and was the only aspect considered in the conceptual framework for this study.

**Time Management.** Time management was an aspect of the need for executive function support and the theme of needing a zeitgeber to ensure that the students were on track was supported in the data. During the first interview with Jimmy, seven of the 18 questions were answered with a direct connection to time. When asked what he likes least about college, Jimmy answered, “how like when assignments are due on Wednesday, sometimes the homework takes longer” (Jimmy, interview, August 17, 2016). When asked who helps him when he has problems, Jimmy answered that after taking tests in computer class, “sometimes the teacher wasn’t there and then like the teacher would ... take a few days to answer e-mails about the test” (Jimmy, interview, August 17, 2016). When asked if there is anything else he would like to share about his college experience, he answered, “it fits into my schedule really well because I have speech and OT on Tuesday” (Jimmy, interview, August 17, 2016).

Danny had support with timing from his tutor. His tutor shared how she helped him with time by saying to him, “let’s write down the due dates for each of them, so we can focus on what comes first” (Danny’s tutor, interview, February 15, 2017). Danny’s struggles with time management led him to become frustrated when he had a commitment that he did not remember
making. For example, on the day I interviewed him in November, his mother shared that, “… he didn’t know you were coming … he thought it was tomorrow … and I said … you know Tina is going to be there soon and he said no she’s not, she’s coming tomorrow, I said no, she’s not, she’s coming in about ten minutes … and I said will you do me a favor and check your texts and he [she made a grunting sound] and he was like you just ruined my day” (Danny’s mother, interview, November 19, 2016). From Danny’s perspective, his tutor helped him to keep up with the timing of assignments. He described her support as, “what we do is we go through all my classes and afterwards we basically, she helps me make a plan of what I need to do to keep on track” (Danny, interview, September 24, 2016).

Victor had fewer references to time, perhaps because of the flexibility of taking only online classes. His mother reported that he had improved over the years regarding turning in assignments in a timely manner. His mother stated,

so far this semester … it’s been much better, because he’s getting things done and not, not so many, I mean in the past I’ve gotten e-mail frequently, because his routes into mine … but I’ll see the e-mails frequently saying why was this not turned in? I never got anything for this? I haven’t seen that once this year, so that’s a big plus” (Victor’s mother, interview, October 8, 2016).

When asked if anything really annoyed him, Victor answered,

going under the thought of my classes … some teachers being fairly slow getting back to me is pretty annoying, because usually … when I’m asking them something it’s because there is a serious issue with an assignment that is due soon … so it is due in six hours, and I can’t seem to access the website anymore (Victor, interview, December 10, 2016).

Support Beyond Time Management. However, the need for support extended further
than the need for help with issues regarding pace, rhythm, or time. The students needed support for setting up study plans, deciding what to study and when to do it, organizing materials, initiating tasks, persisting with tasks, attending to tasks or classes that were not interesting, and communicating with professors and others at the university. Kaufman (2010) described the following aspects of the metacognitive strand of executive function in addition to time management: goal setting, planning and strategizing, sequencing, organization of materials, task initiation, executive and goal-directed attention, task persistence, working memory, and transitioning between tasks. Executive function was not an aspect of the conceptual framework that guided this study; it was a finding that emerged from the study.

An early understanding that students with autism attending postsecondary programs needed support in beyond time management was evident in a conversation with Danny’s mother. When asked what barriers may exist for students with autism in college, her answer centered around issues related to executive function. She stated,

> to be proactive on everything, I mean you are asking them to essentially be organized when a hallmark is that they are not organized … you are asking them to … be level-headed … to plan … you’re asking them to be logical and methodical, when a hallmark is that they are not logical and methodological (Danny’s mother, interview, September 27, 2016).

During another interview, she discussed the significant support her son needed with organization and found it paradoxical that students who did not want to engage socially are expected to self-advocate. She stated, “well, organization is the worst, and so … motivation … for the supports when they are supposed to be self-motivated, because that is one of the main hallmarks” (Danny’s mother, interview, October 15, 2016).
Executive function continued to emerge as an important theme as I wrote analytic memos about the data. In February, I wrote the following memo (analytic memo journal, February 23, 2017):

The time that [Danny] dropped a class, bringing his enrollment below full-time and leading to the loss of his grants was a real crisis. Mom’s frustration was intense, ‘he pulled this shit on me at Bellarmine and I about lost it’ (Danny’s mother, interview, September 24, 2016). [Danny’s] decision to drop a class changed his enrollment status. This is an example of his executive function, because although the registrar’s office reported that they explained the situation of going below full-time to [Danny], he did it anyhow. Mom said to the bursar’s office, ‘you do realize that you were speaking to … a person with disabilities’ (Danny’s mother, interview, September 24, 2016). This is an interesting development, as [Danny] is an adult legally and his disability is not declared to the registrar’s office or to the bursar’s office… how would they know? What type of responsibility do they have to figure out that a student may have a disability and not let them make a decision that would jeopardize their funding? Colleges are adamant that students have the autonomy to make their own decisions, but how does one account for a student who appears to be an independently functioning adult, but who has major deficits in his executive function? It is an invisible disability with dire consequences for a student’s future. If [the disability coordinator] had not found a class that [Danny] could get into late in the semester, the tuition owed would have been prohibitive and would have necessitated [Danny] dropping out of school for the entire semester. Major consequences from a decision made by an individual with a disability who appeared to be making an informed decision. With this event, [Danny’s mother] realized that [Danny]
will need more support than she hoped as he develops into a young adult. This event triggered a step toward further support. [Danny’s mother stated], “it’s what finally got me to put him on the [Medicaid] waiver waiting list” (Danny’s mother, interview, September 24, 2016).

The findings from the analysis of data were beginning to indicate that something more than time impacted the experience for students with autism in postsecondary education. While the literature review did not reveal executive function as an aspect of the conceptual framework, it was a finding that emerged from the analysis.

**Executive skills.** Kaufman (2010) defines executive skills as the “… elements of cognition that allow for the self-regulation and self-direction of our day-to-day and longer term functioning” (p. 2). Metacognitive skills considered to be aspect of executive function include goal setting, planning, strategizing, sequencing, organizing materials, managing time, initiating tasks, persisting with tasks, directing attention toward goals, self-monitoring, and shifting between tasks (Kaufman, 2010). The tasks requiring executive function are processed using working memory. In addition to directing cognitive and academic functions, executive skills “… act as the essential modulators of functioning in the social world” (Kaufman, 2010). Executive skills addressing social functioning include impulse control, response inhibition, emotional control, and adaptability (Kaufman, 2010).

**Executive dysfunction in autism.** Many individuals with autism exhibit behaviors characteristic of executive problems (Rumsey, 1985). Ozonoff and Schetter (2010) described that “… their singular focus on special topics, their difficulty transitioning between activities or relinquishing favored objects, resistance to change, repetitive language and motor behavior, and tendency to perseverate in ways of doing things are all signs of executive dysfunction” (p. 134).
Students with characteristics of autism exhibit many signs of executive dysfunction. The students in the study manifested difficulties with executive function in areas such as handling logistics of the college experience, planning for and completing coursework, managing time, and communicating with professors.

**Surrogate prefrontal lobe.** Executive function is primarily directed by the prefrontal lobe of the brain. The prefrontal lobe

… possess the capacity to initiate movement, problem solving, and goal directed behavior. It is the part of the brain that musters the resources available throughout the larger central nervous system to focus on and address what needs to be done as you go about your life (Kaufman, 2010, p. 26).

Goal directed behaviors such as registering for college, planning assignments, and deciding how to best communicate with professors required executive function. Students in this study had varying levels of executive function deficits that required support. Jimmy required the most support, to the point that his mother acted as his “surrogate prefrontal lobe” (Kaufman, 2010, p. 81). Analysis of the data indicated that Jimmy had significant support for tasks requiring executive function with the exception of the following three tasks: (1) he attended class alone, (2) he answered questions for in-class assignments independently, and (3) he took his own notes. Every other aspect of the college experience was significantly supported by his mother (Table 7). Danny engaged in more aspects of the college experience independently, but had executive function support from both his mother and his tutor. Victor had the least level of support for executive function, but that was not the case when he started college. Even with the minimal support that Victor had, his mother continued to check his e-mail daily to ensure that he did not fall off track.
Considerations regarding executive function needs. Students with autism often have the support of an aide during their kindergarten through twelfth grade years (Ozonoff & Schetter, 2010). Of concern is when the aide completes all of the executive function needs of the student. Ozonoff and Schetter (2010) state that

the ultimate goal of the support should be independence in the learning process. Often, however, the aide becomes a secretary for the student, taking on all of the organizational and planning components of the learning process. The aide breaks the tasks down for the student, provides step-by-step instruction, gathers the necessary materials for task completion, reminds the student of potential outcomes, and provides consequences for performance. The aide, in effect, has taken over the student’s EF [executive function] needs. Often the only thing the student is required to do is produce the answer or product, without having to participate in the process [italics in original] (p. 152-153).

The concern with the aide doing all of the executive function tasks is that the student will not learn to complete those tasks. In this study, Jimmy’s mother acted as his surrogate executive function. While she attempted to coach him regarding self-advocacy, many of the tasks she completely handled. Jimmy’s responsibility was limited to gaining an understanding of the content and being able to demonstrate his knowledge, while his mother took care of the entire process of postsecondary education. This finding led to consideration of what the purpose of education was through an epistemological lens.

Traditional and Postmodern Epistemologies. Through the lens of a traditional epistemology, the focus of an academic program is the learning of course content and the completion of a degree (Brantlinger, 1997). Brantlinger (1997) states that “traditional subject-matter-centered and academically oriented content comprises the best curriculum for most
students” (p. 434). From a postmodern perspective, institutions for learning should be places where challenging, practical, and relevant experiences take place and where authentic, important questions are asked. Education should encourage the formation and expression of informed views, lifelong learning, an active search for solutions to serious societal problems, caring for others, and constructive community participation (Brantlinger, 1997, p. 435).

From a postmodern perspective, the goal of education is to be a lifelong learner and a contributing member of society.

Through a traditional lens, the goal of postsecondary education is to complete a degree and therefore the level of support for tasks requiring executive function is not as relevant as successful course completion. However, I posit that the development of executive function skills are as relevant as the demonstration of knowledge of course content.

In light of the uncertainty for the future for each of the participants in the study, perhaps the development of executive function skills was more relevant than the completion of college courses. Each of the students was completing his postsecondary education with a significant uncertainty regarding his independence after college. Jimmy’s mother stated that he was going to get his associate’s degree at the community college, “and not really worry about beyond that just yet” (Jimmy’s mother, interview, August 17, 2016). Danny’s experience with almost losing his financial aid led his mother to apply for him to be on the Medicaid waiver waiting list as she was concerned that he would need the support of an adult after graduating. Danny’s mother stated that after he gets his bachelor’s degree, “I don’t know what to do from there, it worries the heck out of me, I don’t know, or he could be with me forever, would he be like the shadow in my basement forever?” (Danny’s mother, interview, September 24, 2016). She described some of
the tension regarding the future her son as follows,

    I know, some people figure it out, I don’t know, but the problem with a high functioning one is that they are on that, you know, if he was a lot lower, I would be like, we need to go to disability, we need to do this, and we need to do that, you know, I need a babysitter in here, but then he’s at that high level where it’s like, you think he can do it, but can he do it, you know, I don’t know, so I’ve always been like that, I don’t know, I don’t know, I don’t know, it’s always been like a crap shoot sometimes … one year at a time, one event at a time, sometimes (Danny’s mother, interview, December 17, 2016).

Victor was uncertain about what would happen after he graduated because of his difficulties with living independently. Victor stated, “moving on my own would be difficult, I’d have to be like married with somebody who could tolerate me and then go out with them, because alone, I don’t function that well” (Victor, interview, September 17, 2016).

    I conclude that a significant finding of this study is the importance of executive function skills and sufficient support for executive function deficiencies. I suggest that consideration of executive function skills for students with autism during postsecondary experiences is relevant to understand the phenomenon.

    Jimmy’s mother insulated her son from many issues and stressors. This insulation was designed to allow him to focus on the completion of academic coursework, supporting a traditional epistemology, rather than encouraging Jimmy to learn to solve his own problems and function more independently – a postmodern epistemological stance.

    Danny needed executive function support for planning and organizing his college work. His tutor was intentional about gradually releasing her support in those areas. Danny’s tutor stated,
I always tell him as a tutor that my goal is to get him to a point where you don’t need tutoring, that’s my goal, so we might always have little thing we need to work on, but making him more self-sufficient so we’re not spending three hours talking about everything, so we’ve been able to cut down a lot, we’re definitely not, we did two session, we will usually do two sessions towards the end of the classes, in finals, like a week, just because there is so much there, but usually, for most of the semester, it’s been just once a week, and then he can text me if something comes up (Danny’s tutor, interview, January 15, 2017).

Danny’s tutor’s goal was to build his independence as a college student. However, there was not a timeline regarding that independence and the primary goal, at least for Danny’s mother, was to get him through college with whatever support was necessary.

I encourage scholars to consider the relationship between executive function development in students with autism during postsecondary education with outcomes in the years after graduation. Further consideration of the epistemological lens of the families supporting students with autism adds to an understanding of how executive function skills are addressed during college. If the family has a primarily traditional epistemological lens, the student will be supported as much as necessary to ensure that he completes college. If the family has a primarily postmodern epistemological lens, learning to function independently (using executive function skills) in society could be considered more important than the completion of a college degree.

By intentionally considering the purpose of postsecondary education through a postmodern epistemological lens, the inclusion of executive function skill development as an essential skill may be warranted, which may in turn lead to less uncertainty regarding the future for students with autism.
Implications of the Study for Students with Autism

**Executive function.** Students with autism in postsecondary programs need support for tasks requiring executive function. The support person may be a parent, a tutor, or someone else. This person would help with areas of executive function and self-advocacy, such as planning assignments, breaking major assignments into manageable parts, developing study skills, following through with appointments, troubleshooting and resolving problems, facilitating communication with university faculty and staff, handling logistics of registration and financial aid, monitoring e-mail, developing strategies to address frustrating or overwhelming situations, providing testing accommodations, and facilitating engagement in social activities. Additionally, this person would instruct the students in methods to gain independence regarding executive function.

**Specific examples of executive function support.** Jimmy’s mother was discussing his need for support regarding timely completion of assignments. She stated, “My head is like … that’s due on the 20 something, but I don’t think that gets through his head so much” (Jimmy’s mom, interview, November 16, 2016). Without the support of his mother, it was likely that Jimmy would neglect to meet academic deadlines. The support provided by Jimmy’s mother was fully enmeshed in his experience, to the point that she used the pronoun *we* when discussing the completion of assignments and going to school. For example, when describing Jimmy’s schedule, his mother stated,

He has Monday and Wednesday classes and sometimes there is a lot of homework to be done from Monday to Wednesday, and then from Wednesday back to Monday, we have quite a bit more time, we’re really jam-packed sometimes with that schedule (Jimmy’s mother, interview, August 17, 2016).
On another occasion, Jimmy’s mother was describing an assignment that she thought was a bit of a surprise. She stated, “So when she threw it out there, we thought she had just sprung it on us, but it was actually in the [syllabus]” (Jimmy’s mother, interview, October 12, 2016).

Jimmy’s mother described the probably consequences of her not supporting him with executive function as,

If I didn’t cattle prod him, I mean if I left it completely up to him, I know that he wouldn’t get everything done … if he were left to his own devices, I think he would have a harder time dragging himself away from sports and other things, and I think the time management is kind of harder (Jimmy’s mother, interview, December 7, 2016).

In this example, Jimmy’s mother was describing support for the executive function skills of time management and task initiation. Her comment about him most likely not getting everything done related to goal setting, planning and strategizing, and task persistence, which are also executive function skills.

Danny’s mother shared why Danny’s tutor needed to assist him with executive function skills. She said,

It’s all the stuff he doesn’t like, he has a real problem getting through something that is boring or mundane, things that are required to get to the things he enjoys, he can’t muddle through that without constant support and prodding (Danny’s mother, interview, December 30, 2016).

His mother described areas in which Danny needed support in a discussion about barriers for students with autism in college. She said,

It’s all the kinds of higher level thinking that we are talking about, like how do you find your classes, how do you … navigate the campus, how do you read your schedule, how
do you organize your day … how do you plan your time and prioritize what you need to get working on, what’s the most important, how do you study (Danny’s mother, interview, December 17, 2016).

Each of the concerns that Danny’s mother described required executive function. Students with autism require support for these skills and many others as they engage in postsecondary education. Danny’s tutor explained specifically how she assisted him with tasks requiring executive function. She described how she supported him as,

We go through each class and … look at the syllabus, see what’s coming due, see how he’s doing it … and then we would have specific things we would focus on, say a project is due in two weeks, focusing a bigger chunk of time on that (Danny’s tutor, interview, January 15, 2107).

Danny’s success in postsecondary education was directly related to the support he received from his tutor for executive function. Without the support of his tutor, he mother said that he, “probably would have failed out by now … he needs someone to keep him on track, but it couldn’t be me … if he didn’t have her, he would have probably failed out” (Danny’s mother, interview, December 30, 2016). Danny’s tutor shared a similar thought. When asked what would have happened if he did not have a tutor, Danny’s tutor responded, “Well, he would have failed out a while ago” (Danny’s tutor, interview, January 15, 2017).

Victor has needed less support for executive function over the years, but his mother continued to closely monitor his progress. His mother stated, “I check his e-mail every day” (Victor’s mother, interview, December 10, 2016). Her concern was that he would start falling behind and would then just completely disengage from a class, leading to failure. Victor explained how he perceived his struggles with assessments. He stated,
I don’t like tests because it’s constantly trying to remember a bunch of stuff, and unfortunately, I get a little scatter brained with trivia knowledge, rather than just memorizing every periodic table of elements (Victor, interview, September 17, 2016). This statement demonstrated his concern about several areas of executive function. The comment about trivia knowledge related to struggles with goal directed attention and working memory. The statement indicated that he may have struggles with planning and strategizing the study process, while his statement about being scatter brained may reflect an impact on sequencing and ordering information that he has learned.

I observed deficiencies in executive function first-hand both times that I observed Victor engaged in his online classes. During the first observation, Victor logged on to his online class and was surprised that a test was due that night. During the second observation, he stated that it was weird that an assignment was due of which he was not aware. He stated, “Good thing I logged on today, those weren’t here yesterday” after realizing that he had an assignment that he did not realize was due (observation, February 11, 2017). Victor struggled with the time management aspect of executive function. He also struggled with goal setting and organization. After Victor realized that he had a test during the first observation, I wrote a journal entry expressing my surprise that he was not aware of the dates of assessments based on the syllabus. I wrote, “I would have thought that there was a date scheduled for assessments on the syllabus. Time / schedule / planning?” (observation journal, February 4, 2017). This appeared to be the type of behavior for which Victor’s mother kept a close watch on his school e-mail so that she could guide him to complete a task or an assessment before it got too late.

**Communication.** A strategy for providing support without violating privacy requirements is for the student to share login information to the university e-mail. That way the
parent or other support person can communicate with professors and other university staff in a method that will not require further privacy release documentation. The support person can also monitor feedback from the professors regarding assignments and notifications regarding the logistics of the postsecondary experience such as registering for classes and ensuring that financial aid requirements are met.

Communication support for each of the students in the study was provided by the students’ mothers. Danny’s mother periodically checks his e-mails. She stated, “I don’t think he even responds to his e-mails unless he’s in a mood” (Danny’s mother, interview, November 19, 2016). His mother’s concern was that he would simply ignore his e-mails if he did not feel like looking at them. Danny’s tutor gently coerced him into answering e-mails. She stated, “You have to put it in a way that he, it’s like his idea … you have to kind of ease him into that idea [of contacting the professor]” (Danny’s tutor, interview, February 15, 2017). Danny was likely to ignore e-mails and reluctant to answer them, so he needed support to ensure that he did not miss anything important from the university or from his professors.

Victor’s mother had gradually released her support regarding communication by e-mail. Early in Victor’s college career, his mother would write e-mails to the professors herself. She stated, “The first couple of years, I did e-mail [from his account] and put your name on it” (Victor’s mother, interview, September 17, 2016). The problem for Victor was that when he was disinterested in something, he was not likely to pay attention to it. Victor’s mother stated, “A lot of times he just ignores [his e-mail] …. I’ll say, [Victor], did you see this and he’ll either say yeah, or he’ll say well, what are they talking about and then he’ll go look” (Victor’s mother, interview, November 12, 2016). Although Victor has increased in his ability to manage communication independently, his mother stated, “I check his e-mail every day” (Victor’s
mother, interview, December 10, 2016).

Jimmy and his mother shared a struggle they had with coordinating a group project. His mother described the difficulties as,

I generally hate group projects because this always happens, it’s either wait until the last minute to get it done, and that’s particularly bad with this generation of students … but then you put a situation like [Jimmy] having a little harder time trying to communicate with five or six group members and them putting it off to the last minute, on top of a little bit of a communication snafu with the [text messaging] (Jimmy’s mother, interview, November 16, 2016).

Supporting a student with autism with communication regarding a group project is made more difficult by the likelihood that his classmates may need support with executive function themselves.

**Dependence.** Students with autism may be more dependent on their family for support during their postsecondary experience. Students in the study were successful partially because they lived at home, had significant support from either a parent or a tutor, and could focus on the purely academic aspects of postsecondary education, such as attending classes, learning the course content, and demonstrating knowledge via tests or papers. Students will benefit from a gradual release of support concurrent with successful completion of academic requirements.

Jimmy’s mother explained her thought process when asked whether she considered having him live on campus. She stated,

No, I’m a bit distrustful sometimes of a situation where he would be actually living and sleeping elsewhere, I’m probably not very trustful in situations, and when he was much, much younger, we had heard about the [university with an on-campus program for
students with autism], where they actually have kind of the insular little mini-campus, moxi-campus and I’m not the most trustful and he’s not, the most independent … And with not driving, and things, especially once the OCD kicked in, so I thought I don’t want to have him stay on campus, we do prefer that he be with us … He’s happy as a lark at home … wouldn’t, what did your grandfather call it, gravy train and biscuit wheels?... He makes us pretty happy too (Jimmy’s mother, interview, August 17, 2016).

When asked how he felt about where he lived, Jimmy answered, “I like it better” (Jimmy, interview, August 17, 2016).

When asked about his choice to live at home, Danny described the convenience of taking a bus to school and the proximity to his job. He stated,

I’m still living with my parents, but the main reason for that is honestly, not only do I, I live close enough to [the university] that a bus drive is like 20 minutes to 30 minutes, like it’s only an hour walk overall, which is honestly very small potatoes, I also at this point, don’t think I’d want to live on campus because I got a job in my second year … and for, funny enough, that’s only a 20 minute walk [from home] (Danny, interview, September 24, 2016).

Danny’s mother has concerns that he may never be able to live independently. She stated,

I’m so scared something is going to happen, something can happen, did you see his bedroom up there and how bad it smells? I’m afraid that my whole house is going to end up smelling like that bedroom, you know, how can he live, how can he even have a house, if one little piece of my house looks and smells like that does, occasionally, I mean every so often, I get in there and I clean it from top to bottom, but I can’t keep
doing that either, because it’s so god-awful (Danny’s mother, interview, September 24, 2016).

While Danny’s mother supported him living at home to facilitate completion of postsecondary education, she had concerns as to whether he would ever be able to live independently.

When asked if he considered living on campus, Victor shared,

I mean it was a fleeting thought, but it, the whole social dynamic of having to have a roommate, dorm mates, and then just having to deal with all of that social stuff as well as then having on top of that, [being responsible] for all of my own things, and it’s just, social anxiety is still something that I do not deal well with, and that’s very much interaction with multiple people throughout the day, exhausting (Victor, interview, September 17, 2016).

Victor reflected on the thought of moving away from home in the future. He stated, “moving on my own would be difficult, I’d have to be like married with somebody who could tolerate me and then go out with them, because alone, I don’t function that well” (Victor, interview, September 17, 2016).

**Disclosure.** A student with autism may consider preparing a disclosure letter to inform professors of the nature of the disability and how it may impact behavior or coursework in the class. Students should be aware that the accommodation letter provided by the disability coordinator will not specify an area of disability and also that university professors may have limited knowledge regarding autism.

The disability coordinators from both universities encouraged students to disclose their area of disability. The disability coordinator from the community college stated that, “I do always ask … is this information that you are absolutely, positively against me disclosing,
because I won’t … but would you, would you like me to if, if I think it can create a better understand” (Community college disability coordinator, interview, August 24, 2016).

Jimmy’s mother supported the disclosure of his disability to faculty as well as students. When asked what she may consider changing if she were able to guide university policy, she stated,

I think I might flat out change the confidentiality. I think the confidentiality rule, in at least my son’s specific autism case, usually winds up hurting rather than helping. I think the more kids know about [Jimmy], the easier it is for them to get to know him, and I think that the teacher ought to be able to say [that he has autism] … I mean that’s the way we have raised him to identify if he needs to, to identify, well he doesn’t walk around and tell people he’s autistic … but I think it’s helpful for kids that are maybe a little unsure … seeing that he is a little different, aren’t you, just a little different (Jimmy’s mother, interview, August 17, 2016).

Jimmy answered his mom’s statement with, “yeah, a little bit different” (Jimmy, interview, August 17, 2016). During another interview, we were discussing barriers for students with autism and Jimmy stated,

I think, well what I think is like some, like if teachers haven’t had experience with it, like, um, if they, like if they are talking to a person and they notice something is wrong they will say what’s wrong sometimes, instead of saying, instead of the person saying, the person is afraid to say what he has, because he’s afraid that if he does that, that he is going to be not as, he’s not going to get as much help as the other guys (Jimmy, interview, September 14, 2016).

From Jimmy’s perspective, he had a concern that if he disclosed that he had autism that he may
not get the same level of support that another student may receive. However, both his mother and his disability coordinator found it more beneficial to disclose his disability.

The disability coordinator at the private university also encouraged students to write a disclosure letter. She stated,

I also have encouraged students on the spectrum to consider writing a self-disclosure letter that goes with their accommodation letter, and that’s a consistent thing too, so something that I can add with the accommodation letter, and I actually give them a template, um, years ago, when I started, I had a student who was here before I was here and … he had a self-disclosure letter he created himself, of course I took his name out of it, but I asked if I could use it, it was so good, it was just so thorough, it just really helped his instructors understand him, otherwise he could seem pretty aloof, pretty disinterested, you know, not engaged, anyway, I give, I have two actually, and so I give students this template to look at and then I encourage them to think about this and I tell them why I think it’s important, um, and then a lot of them will write self-disclosure letters that will then include in their accommodation letters, so that instructor, from the beginning, will have some sort of understanding about the student, um, because one thing that I would say I see this in common is that the instructor when they meet the student does notice something slightly different in the social interaction and instead of them making assumptions about that (Private university disability coordinator, interview, October 13, 2016).

Disclosure of his disability helped Danny with a difficult situation with a professor. His disability coordinator stated,
I did talk with one of his instructors, it wasn’t a major thing, um one of his instructors uh mentioned a concern about uh yeah, he appeared to be sleeping in class, which has happened before, he appeared, I don’t know if he does, but it looked like he was, and she had made an appointment with him to discuss just his grades in general, so she let me know that … because he wasn’t really doing well overall in that class, so what I did, I actually met with [the professor] briefly to try to give her a better understanding of him in general and kind of his patterns and it may look like he’s disinterested, but that’s not always the case … and also how at times if he doesn’t have a buy in, it is harder for him to engage in a class, so I think she appreciated that discussion, it did help her understand him a little bit more, because at that point, she was thinking it might be good for him to drop the class (Private college disability coordinator, interview, December 1, 2016).

After this interaction, the situation for Danny in the class greatly improved. His disability coordinator explained further,

He actually asked me to go talk with her about his diagnosis, about his, again I thought that was a real good thing, he thought it would make her understand him better, so again, that was a good thing too, I thought, because in the past he wanted to keep that off the radar as much as possible, that’s just an excuse, that’s a crutch, you know, I don’t want people to know about that, that’s why he never did self-disclosure letters, so for him to say, yeah, I think it would be helpful if you talked to this instructor, it was huge, yeah, I thought it was big (Private college disability coordinator, interview, December 1, 2016).

When students with autism decline to self-disclose their disability, they are at times considered to be disengaged from the class. The disability coordinator from the private college described the consequences of nondisclosure as,
[The] challenge always is just if the student chooses not to do a self-disclosure letter, will the instructor think that the student just is aloof, disinterested, you know, a poor student, that’s always a challenge that happens, uh, and a concern I have, and if they don’t want to provide a self-disclosure letter and they are doing poorly in the class, and I will talk to the student about what’s your comfort level on us, just the three of us meeting, what’s your comfort level on me talking a little bit about why you are using the services, so we will explore that, um, because that can be, you know, it can be a barrier, an obstacle to get over, if the instructor just doesn’t think they want to be there, they don’t care, and on top of that they are forgetting to turn in assignments, they’re not turning them in on time, and it can really paint a picture that isn’t always accurate, so that can be an obstacle, generally speaking I feel like we make it, in one way or the other we make it past that obstacle, whether it’s with convincing the student to write a self-disclosure letter or later on, all of us meeting, so we can navigate it (Private college disability coordinator, interview, December 1, 2016).

Students with autism are encouraged to disclose their disability to their professors. The Office of Disability Employment Policy offers support regarding the decision to disclose a disability in the postsecondary setting (https://www.dol.gov/odep/pubs/fact/wwwh.htm).

**Grudgingly compliant.** Students with autism may be inclined to shut down and refuse to complete tasks or assignments which are not of interest to them. It is important that the student realizes that he may have to do things that he does not want to do and to have a plan in place for when that situation is developing so that issues do not become a compounding problem that leads to failure. Students with autism need to realize that doing things that they do not want to do or that they may not find meaningful may be a means to an end of completing a college
degree.

Danny thought of college as a grind, something he simply had to do. When asked what was fun at college, he said, “I don’t go to parties or anything, the most fun thing about college is probably just the down time” (Danny, interview, September 24, 2016). During another interview, he summed up his perspective by saying, “I don’t have fun at college, I just go there, get my work done, and go home” (Danny, interview, December 17, 2016). Danny commented on the drudgery of college during another interview. He said, “I go there, I go to class, and I go home … it’s more like a job to me, to be frank” (Danny, interview, October 15, 2016). Danny’s mother shared how he was grudgingly compliant with her demands that he attend school even if he did not get enough sleep. She shared, “He’s been up a few nights, and then he had to get up and go to school and he hasn’t wanted to” (Danny’s mother, interview, October 15, 2016).

Although Danny did not want to attend school on days that he was tired, he followed his mother’s directives and grudgingly went to school. Danny’s mother explained her concerns as follows,

> It’s all the stuff he doesn’t like, he has a real problem getting through something that is boring or mundane, things that are required to get to the things he enjoys, he can’t muddle through that without constant support and prodding (Danny’s mother, interview, December 30, 2016).

Danny struggled with engaging in tasks that he did not want to do. However, he realized that if he just did the task, it would get his mother and tutor off of his back and allow him to do what he wanted to do, which was to spend as much time as possible in his room on the internet.

Victor had a similar challenge regarding things that he was not interested in doing. When discussing classes that Victor was required to take, his mother stated,
he has a very difficult time taking anything that doesn’t relate to what he thinks he should need to know for a class, so extraneous classes, which are required, electives are required, those will set him off, and it will become a diatribe (Victor’s mother, interview, September 17, 2016).

Over the years, Victor has increased his tolerance for doing things he does not want to do. His mother stated,

A lot of times, if it was something that he was not seeing the benefit of as he got on into it, he’s just like, forget it, I’m not doing this anymore, and he’d either quit doing it, or quit worrying about what the grades are … and even though he’s questioned a little bit the need for some of what he’s doing, he still has persisted, which is good (Victor’s mother, interview, November 12, 2016).

Over the years that he has been in college, Victor became more compliant at completing classes and tasks that he would prefer not to complete. However, his mother was concerned enough that he may slip that she checked his e-mail daily.

Mental health. Students with autism commonly have comorbid mental health disorders. It is important that their support person is aware of the impact that the mental health condition may have on the postsecondary experience. For example, an anxiety disorder may prevent the student from engaging in group projects or may lead the student to shutting down when presented with overwhelming pressure. The student may get stuck answering a single question on test and may need a prompt to move on to the next questions. An obsessive-compulsive disorder (OCD) may drive the student to engage in pervasive rituals or steps when completing routine tasks. One student in my study required support to minimize a behavior driven by OCD that had the potential to impact the learning of others in the class. Depression may lead the
student to minimize interaction or to stop attending classes altogether.

Jimmy struggled with obsessive compulsive disorder (OCD) which became more of a concern a couple of days before the semester of the study started. His mom described the impact as,

He has gotten really slow at completing some of his tasks and getting things in and out of the book bag and it has been a real obvious increase, but it only happened, what, two, three days before class, but if you would just look at him, he doesn’t seem anxious or worried, but you can tell that the OCD has really kind of cropped up (Jimmy’s mother, interview, August 17, 2016).

Jimmy’s OCD became a concern during the semester as it threatened to interrupt the learning of other students. As he entered the classroom and prepared to sit down, he would stand for an extended period of time, including after instruction had commenced. His mother described how she handled the situation. She stated,

I had to lower the boom on, he was standing for way too long in [his math] class, and she mentioned it to me … and I, so, just as simple as [Jimmy], now I’m going to check on you, I’m going to peek in there and check, I said at two minutes after ten, and you better be sitting down, and he hasn’t, he’s been sitting down every time, sometimes it just something behavioral, even, just that mom is checking on me, so you better go ahead and sit down, and he, he has been sitting down, I check at 10:04, 10:10, he’s sitting down (Jimmy’s mother, interview, November 16, 2016).

Jimmy’s mother kept him fairly insulated from the pressures of college so as to protect him from having additional impacts due to mental health concerns, to the point that when asked what made
him feel stressed in college, Jimmy replied, “I don’t feel the pressure” (Jimmy, interview, August 17, 2016).

Danny struggled with anxiety and depression. During an early interview, I asked him how he was feeling. He stated, “I feel in a good mood a bit, a bit anxious about things is never a bad thing, so I’m a little anxious, but I’m mostly confident, overall” (Danny, interview, September 24, 2016). Danny’s mother felt a tension regarding his mental health. When discussing an issue he had experienced during the semester, she stated, “I was a little worried about him, because I know how he can decompensate, and I was afraid that was going to happen” (Danny’s mother, interview, December 30, 2016). Danny blamed his mother for some of his feelings of depression early in his college experience because she enrolled him at the private university instead of the state university that some high school friends had attended. His mother described how she responded to his concerns as,

I tried to tell him that all college freshman feel some kind of depression and disorientation and detachment because their life has changed so much, especially if they are not living on campus and making new connections, and which he wasn’t, he didn’t want to be, um, he just, he just wouldn’t hear it, it, I and what I had done to facilitate [the private university] and not facilitated [the state university], was the source of all his problems, and he would never forgive me, as long as he lived (Danny’s mother, interview, September 24, 2016).

Danny’s frustration with his mother over the university that he attended became a grudge that he held for years. Danny’s mother described her perspective of how Danny balanced his preference for isolation with his desire for connection. She stated,
Yeah, anxiety, I think he, inertia, he has a tendency to stop, you know, not move, no movement, you know, room full of soda cans, a horribly, a hideously dusty room he’s never cleaned, horrible, filthy bed, he just sleeps in this filthy bed, you know, never strips it for me to wash it, you know, and he’s always like on the computer talking to these virtual strangers in virtual reality mode, you know, I think if he, and the anxiety, I think, causes him to decompress into that, into that, which I see as like a collapsing into his own world … but going to job, going to work, going to school, forces him into the world, sometimes I still think he feels alone in the world and I don’t think he likes that, but then sometimes I think he wants it, it’s this push/pull between wanting connection and wanting everybody to leave him alone, you know, maybe that’s why he likes the virtual world so much, because they are separate from him he can click them off when he wants to … they are there, it’s interaction, he feels like they are interested in him, he feels like he contributes, but they are very safe, they are, you know, they are really far away (Danny’s mother, interview, December 17, 2016).

Victor’s manifestation of his mental health disorders of anxiety and obsessive-compulsive disorder have decreased in intensity over the years. His mother described his improvement as, We’ve got much less pacing, we used to talk about, seriously, before work, or before school, it would be pacing, pacing, pacing back and forth in the house, and his dad would say, Ian, you don’t have to leave for an hour, and he was like, I know, but I’m already, and he’s picking at his, the thought of having to go (Victor’s mother, interview, October 8, 2016).

Victor described how his anxiety contributed to course failure when he started falling behind. He stated,
It’s sort of spiral, once I get behind, I start seeing the work piling up, and it gets harder and harder to push through, because it’s piling up faster than I’m getting through it, and it’s a thing, it’s like, if I stay on top of it, it’s just fine and I can work just fine, but once I get behind, it gets, it just becomes an issue, of just my efficiency drops, my motivation drops, and then just, may any will I have to get through it drops … my father will get like really mad when I start, because I’ll start pacing, and just in general being kind of obsessive and he gets completely wigged out over it, he does not like it, and, yeah, anxiety … anxiety comes quick and it’s, it’s uh, gets to the point where I just don’t do anything (Victor, interview, September 17, 2016).

For Victor, the consequence of his anxiety was that he essentially shut down, which led to class failure.

During the semester of the study, Victor had a car accident. His mother was concerned that he would stop driving completely, an indication of how his mental health may impact his behavior. Victor shared that he had a, “constant sense of dread of what happens if I mess up [in college] ... it’s several years of my life devoted to maybe earning a livable wage afterwards, by the time I’m middle aged and I’m actually out of college” (Victor, interview, February 11, 2016).

The pressure that Victor felt regarding the possibility of not completing his postsecondary degree contributed to his mental health concerns. Victor’s family tended to be the scapegoat for his anxiety. She stated, “we can’t get past the anxiety levels … a lot of times there is some flack coming back on the family … because he doesn’t deal with other people that much, so that’s his only outlet” (Victor’s mother, interview, February 11, 2017).
The disability coordinator from the private university described how she supported a student with autism who required an emergency mental health consultation at the end of a semester. She stated,

Generally it’s the highest anxiety time for these students, and that’s hard, I just met with one student today, um, who ended up at [a mental health hospital], he didn’t stay, thank goodness, but he was assessed because the anxiety was so high, yeah, because it is, even if they have been pretty much on top of their work throughout the semester, there is this perception all of a sudden, um, you know, I have to do this final, I have to do this, I’m unsure of what this is, and I don’t know this, and it just tends to be just a very overwhelming time for them, but for the, as I’m going back thinking through, it’s something that they can get through, and once they get through it the first time and then the second time, it gives me some ammunition to say, ok, here’s what we can expect, we are three weeks before finals, you know what happened last year, so trying to build up, kind of helping them see this is what you do, here’s your pattern, but look what happened last year, you got through it, and it’s ok, and then try to even see, is there anything you can do, is there a paper, is there any busywork that you can start, just finishing now, so that you can go into finals without that hanging over you, so that’s how I try to approach it is them knowing their own pattern, them remembering uh, that they did get through it in the past, and then trying to be proactive to get busy work done, other stuff done, prior to finals (Private college disability coordinator, interview, December 1, 2016).

The disability coordinator provided support for a student with autism during a time of high anxiety by explaining how he had already successfully completed a full semester and reminding him of how he handled his pressure and anxiety.
Pressure. Students with autism need to realize that there are going to be times during the semester that have increased levels of pressure, such as during midterms and finals. It is important that there is a support person to guide them through this during at least the first several semesters so that the student can develop strategies to deal with increasing levels of stress and issues of executive function required to manage escalating numbers of assignments. Students with autism who received special education services in high school will be transitioning from comprehensive support from a team of educators to a situation requiring self-advocacy and self-determination. It is a situation that has been described as falling off a cliff regarding the level of support. The student needs to be aware of the difference between high school and college and would benefit from a proactive plan to address times of increasing pressure regarding assignments and tests.

Danny discussed his reaction to the increased pressure of assignments near the end of the semester. He stated, “I’m just feeling more like I have more stuff to do that I don’t really want to do, that’s all” (Danny, interview, November 19, 2016). During the next interview, when asked if the professors gave too much work he stated, “I think that they give a fair amount, it’s just that they all pile up at the end because they all have to get everything in at once, it’s really something that is unavoidable” (Danny, interview, December 17, 2016).

Victor’s ability to handle pressure improved over the years that he was in college. His mother discussed how she used to see e-mails asking for missing assignments. She stated, “I mean in the past I’ve gotten e-mail frequently … but I’ll see the e-mails frequently saying why was this not turned in? … I haven’t seen that once this year, so that’s a big plus” (Victor’s mother, interview, October 8, 2016). Victor’s reaction to pressure varied depending on what the source of the pressure was. His mother stated,
If there was an emergency with one of the animals … he can approach it very calmly … so some types of pressure he approaches well, if it’s anything he takes personally or feels like he is being wronged in some way, that pressure he tends to get more …

argumentative, combative, … oppositional about the whole thing … he only sees the side where he’s being [wronged] (Victor’s mother, interview, December 10, 2016).

Victor did well with certain types of pressure and not as well with other types of pressure.

**Social.** Students with autism may require support with social interaction. The students in this study engaged in limited socialization that gradually increased over the years in school. Socialization may benefit from facilitation by a support person. One of the students had a support person regularly guiding him as to interacting appropriately with peers and developing self-advocacy skills. However, parents and university staff should recognize that a student with autism may be content with his preferred style of socialization and should be cautious of forcing socialization simply for the sake of engaging what may be considered more neurotypical socialization patterns.

The disability coordinator from the community college encouraged parents to not send their students with autism to college simply for socialization purposes. She stated,

I really wish that we could afford students some kind of a social outlet, with other students who have autism, um, we have a lot of parents who want to send their kids, I say kids, but mostly it’s the younger ones, you know, they want to send them here because they just have to be social and this is not a good social experiment for them, it’s a very stressful social experiment for them, and they’re probably not going to be social anyhow … It’s very, very stressful on them when they don’t want to be here and they’re being forced to be here because they need to be social, and we get, we get some of that, and
sure enough, those are the ones that end up not, not sticking it out (Community college
disability coordinator, interview, August 24, 2016).

College is too stressful for students with autism to attend simply for socialization purposes.

Jimmy’s mother was asked what she would change for students with autism attending
postsecondary education. Her response centered around the inclusion of some type of
socialization during classes. She stated,

I’d have to have some way to develop, almost like somehow incorporate a social aspect
into at least some of the classrooms if, if you know if not, I don’t know, it’s so difficult
because it is not like, you might find kids willing to volunteer to walk up to someone as
they are coming through, but you can’t, you know, expect that or force the other, you
know, and things, so it’s hard to know what, but if I could just say this is how it’s done,
so kind of more social aspect of the classes or the area here where they could (Jimmy’s
mother, interview, September 14, 2016).

It was difficult for Jimmy to initiate conversations with peers, so his mother appreciated it when
professors encouraged interaction between students during class.

Danny preferred to keep to himself rather than socializing with peers. When asked if he
had any interaction with peers, he stated, “I don’t talk to them much, there are a few of them that
are friendly, but I guess I like to keep to myself” (Danny, interview, September 24, 2016). Both
Danny and Victor preferred to socialize online and were frustrated when they were forced to
interact socially. Danny stated,

I don’t like talking to people much at all … I just like to keep to myself, honestly, that’s
all … certain people think it’s a good idea to let people who like to keep to themselves be
forced to talk to people, it’s a bad idea (Danny, interview, December 17, 2016).
Not only did Danny prefer to be isolated, he was frustrated when someone tried to force him to be social.

Interestingly, while Victor preferred being isolated in his home on the internet, he considered meeting classmates as a fun aspect of college. He stated, “I’ve met some fairly colorful characters in classes, generally that’s probably one of the better parts are those kind of people you can meet” (Victor, interview, December 10, 2016). Victor has emerged socially over his years in college. For a student who was prone to being “OD’d from human society” (Victor’s mother, interview, November 12, 2016), Victor became more social over the course of the semester. His mother stated, “he has gone out a couple of times with … other people, he went out with a girl, but he also, it wasn’t just Megan you were with, it was here brother, there’s people in public” (Victor’s mother, interview, February 11, 2017). In a funny story, Victor’s mother shared how he started going to movies with a girl he worked with, but only went once as he was short on money so he went to the other movies with his mother because she paid for it.

**Support.** Students with autism entering postsecondary education settings need to be aware that significant support may be necessary during the process. The area for which they may most need support can be described as executive function and includes tasks such as planning and organizing studies, solving problems, and handling logistical aspects of the postsecondary experience. The student should also be aware that he can learn executive function skills.

Jimmy had the most significant support for executive function skills. His mother drove him to school, studied with him, and proctored his exams. Danny was more independent than Jimmy as he independently took a bus to school, attended classes and studied independently, and managed his own assessments. However, he needed his tutor to assist with planning and
organizing his coursework and papers. Victor was the most independent of the three students regarding executive function. He drove himself to work and completed all of his online assignments independently. However, as evidenced by him not realizing that an assignment was due during each observation, he needed support for timeliness and planning. His mother provided that support by checking his e-mails daily so that if he slipped behind on an assignment or assessment, she could remind him to complete it.

The students in this study had significant support. However, the students had to be compliant with the guidance of the support person, whether it was a parent, a disability coordinator, a tutor, or another support person. Compliance was important even if the student was not interested in the task or assignment.

Students may want to consider sharing the login information for their university e-mail to enable interaction with college faculty or staff without violating student privacy issues. Students may also want to consider living at home for at least the first year of college, but perhaps for the entire time they are enrolled in postsecondary education. This will minimize the number of changes to which the student will be expected to adjust and will ensure that the family can closely monitor how the student is managing the transition.

The mothers of each of the students in this study monitored their sons’ school e-mail accounts to ensure that assignments were completed and that questions from professors were answered.

Students with autism are encouraged to visit the disability coordinator to set up accommodations. It may be beneficial to set up weekly meetings with the disability coordinator to support the student with planning and organizing studies and learning to self-advocate. The student should ensure that there is someone to provide support with following through with the
steps required of the disability coordinator.

The disability coordinator from the community college described how she provided support for students regarding socially appropriate behavior in the classroom. She stated that when they are frustrated, then

I say you know what, if you need to come here and shut the door and cuss and tell me how much you don’t like your professor, that’s fine, as long as I don’t feel threatened, that’s ok … you know, but you cannot do it in the classroom and you cannot do it in way where somebody feels threatened … so, you know, we have what we call courageous conversations at the front end, you know, and I say this is where we have to keep things real, and I would rather have it be real here, then for something to happen out there that you don’t expect (Community college disability coordinator, interview, August 24, 2016).

The disability coordinator was frank and pragmatic with students with autism about the realities of threatening someone in a college setting.

**Implications for Parents of Students with Autism**

**Accommodations.** Students with autism are generally provided accommodations through the university disability center. A student may need support with the logistical aspects of setting up an appointment with the disability center and attending the meeting. The student should be encouraged to self-advocate, but realize that it may take many years before completely independent self-advocacy is possible.

**Behavioral change.** Students with autism will gradually become less dependent and more able to complete logistical, self-advocacy, and executive function tasks on their own. However, this may take several years or more. Be prepared to provide your student with enough
support to allow them to make this transition successfully.

**Executive function support.** A student with autism may need support with executive function to help with completing logistical tasks, maintaining timeliness, breaking assignments into incremental parts, and other aspects of postsecondary education beyond simply attending class and taking assessments. This person might be a parent or a tutor. A disability coordinator may offer weekly check-ins to ensure that a student is staying on track with assignments and to assist the student with self-advocacy, problem solving, and tasks requiring executive function as necessary.

**Communication.** Parents may want to encourage their student with autism to allow a support person to monitor their university e-mail account. This allows the support person to communicate directly with university faculty and staff without violated privacy regulations. It also allows for the support person to ensure that the student is following through with assignments and other requirements regarding college coursework and logistics.

**Dependence.** The students in this study all started their college experience with considerable dependence on their family. All three students lived at home, had their laundry done by their mother, at many meals at home, and anticipated living at home after completing their intended degrees. Each of the three students knew prior to starting college that living at home would be the most successful housing arrangement. Results of this study support the consideration of having students with autism live at home at least until it is evident that they can manage the academic aspects of college.

**Eligibility program.** Parents of students with autism need to understand some of the differences between high school and college. Postsecondary education is not an entitlement program. What that means is that when in high school, students with autism are guaranteed of a
free, appropriate, public education. A student cannot be denied that experience even if his behaviors are distracting to other students. However, postsecondary education is what is called an eligibility program. If a student threatens to blow up the school, even if it is a manifestation of his disability that he may say things that he does not intend to carry out, he is going to be placed on probation; if he is allowed to return to college, he may have significant restrictions (Community college disability coordinator, interview, November 23, 2016). Students with autism may have some behaviors that were tolerated in high school that may be grounds for dismissal from college. A significant concern for the students in this study was that they not engage in behaviors that may impede the learning of other students.

**Familiarity with autism.** A barrier for students with autism attending college may be the lack of familiarity that professors have with autism. The accommodation letter sent out by the disability coordinator does not specify the specific area in which a student has a disability. A professor who does not have prior experience with a student with autism may have limited to no understanding of how to support the student. Results of this study indicate that a disclosure letter to each professor may provide additional information about the unique needs and characteristics of each student so that professor can better understand how to support him.

**Gradual increase in workload.** Many students graduate from high school and then attend college full-time. Based on the results of this study, it may be beneficial for a student with autism to start college with a reduced caseload. The student may also benefit from taking a course online.

**Insulation.** It may be beneficial to insulate a student with autism from many of the logistical and self-advocacy demands of postsecondary education to allow for the students to gain the ability to engage in self-determined behavior with scaffolded support. The level of
insulation varied for the three students in this study. However, as the student successfully manages the academic aspects of postsecondary education, he should receive coaching in areas supporting independence and goal directed behavior by increasing his ability to engage in executive function.

**Mental health disorders.** Comorbid mental health disorders were significant concerns for each of the students in the study. Parents are advised to consider how they accommodate for their student’s mental health concerns and to ensure that they share those strategies with the disability coordinator.

**Social.** Students with autism may need support to handle issues requiring social interaction, such as completing group assignments. Parents may want to consider that socialization looks different for each of the students with autism in this study. One student primarily socialized with his family. The other two students had an extensive online network. One student had an emerging relationship with a girl and spent a limited amount of time outside the family with his friends. Our society tends to have a neurotypical view of socialization. It is important to be accepting of the style of socialization with which an individual student is most comfortable.

**Socialization as a primary goal of college.** Parents are strongly discouraged from sending their child with autism to college simply for increased socialization. College is too stressful and difficult for it to be the solution for an individual with autism who is not inclined to engage in the academic work. It is tempting for parents to want their child to go to college as that is what many of their peers are doing as they graduate from high school, but unless the ultimate goal is learning the academic content, college should not be a consideration.

**Tension.** Parents of students with autism may expect to feel a tension between how
much support to provide and allowing the student to develop as an independent adult. It is important that the student be asked to engage independently in what Vygostky would declare as their zone of proximal development (Vygotsky, 1978). The students in my study would have failed had they been expected to complete the requirements of postsecondary education independently. In fact, the students in my study would have never registered for college had it not been for their mother completing all of the paperwork. However, there was also considerable uncertainty regarding the future for all three of the students in the study. An tension may be felt by parents between focusing on successful course completion and focusing on teaching skills to become a self-sufficient, contributing member of society.

**Implications for University Disability Coordinators**

**Executive function.** Students with autism may need significant support, especially during the first couple of semesters of college. Results of this study indicate that students with autism benefit from support for executive function skills. If appropriate, the parents can be encouraged to provide scaffolded support for the student so that the student can initially focus on the academic requirements without being overwhelmed by the social or self-advocacy aspects of college. This role was filled by a tutor for one student in the study. A disability coordinator interviewed during this study described a student with autism who met with the disability coordinator weekly and managed to complete a four-year degree. However, results of this study indicate that students may benefit from a level of support somewhat greater than meeting with the disability coordinator weekly. In light of the uncertainty regarding options for independence following graduation, the direct instruction of executive function skills should accompany support for executive function.

**Mental health.** Students with autism are likely to have comorbid mental health
disorders. Disability coordinators may have to clearly explain the difference between IDEA-supported high school and ADA Section 504-guided higher education. Disability coordinators are encouraged to have what one individual called a courageous conversation with students with autism and their parents to discuss the consequences of certain inappropriate behaviors on their eligibility for continued enrollment in college.

Support. Results of this study indicate that disability coordinators need to be prepared to go outside the box in supporting students with autism by including the parents in the postsecondary experience. For two of the students in this study, this was facilitated by the student signing a release allowing their parent to interact with the university on their behalf.

Implications for University Advisors

Abrupt inflexibility. Students with autism may be highly sensitive to certain degree requirements. For example, one student in this study refused to complete an unpaid internship as a part of the path to an engineering degree, leading him to change majors. While advising students with autism, results of this study indicate that it would be beneficial if an advisor would describe the requirements of a program of study in significant detail. It would also be beneficial if advisors strive to understand some of the mental health and sensory needs of the student to try to brainstorm potential barriers prior to the student selecting a specific degree.

Similar support may be necessary in selecting between possible courses to fulfill a requirement. For example, a disability coordinator explained how describes the two courses necessary to fill a requirement at a community college: public speaking versus interpersonal communication. Each course has an aspect that may be a barrier for a student with autism. In public speaking, the student must conduct presentations in front of the class, while in interpersonal communications the student must work with a small group. Each course has
ramifications for students with autism.

**Support for executive function.** Students with autism may need significant assistance with areas requiring executive function. The students in the study each received extensive support from their mother regarding applying for the school, handling the financial aspects of school, registering for classes, and other logistical aspects of the process. Results of this study indicate that students with autism would not have attended college had it not been for their mother completing these steps. University advisors are encouraged to *go outside the box* which means that students with autism are encouraged to have their parents be involved in the postsecondary experience.

Also, university advisors should be aware that students may have an issue with aspects of a degree that would warrant the student changing majors and it is best if they have the most complete information possible before selecting a major. For example, one student in my study was considering an engineering degree, but then realized that a requirement of an engineering degree was participation in an unpaid internship which was unacceptable to this student and he changed his major. Had the student realized ahead of time that the degree required an unpaid internship, he would have selected a different major without starting an engineering degree.

**Implications for University Professors**

**Abrupt inflexibility.** Students with autism may be what emerged in the study as abruptly inflexible. One seemingly tiny issue may trigger a complete shutdown. Familiarity with autism in general and with the unique concerns for each student may help to minimize this type of a situation. Professors may also want to consider flexibility regarding group assignments, such as placing a student with autism in a group with a peer deemed likely to be supportive of the student’s differences.
The disability coordinator at the community college shared the experience of a professor who had a student with autism who was scheduled to take a class with her for a second semester. The disability coordinator described the situation as,

[The professor] called me the first day and said he didn’t come to class today, and I said he didn’t, he was here, I saw him, he didn’t come by my office, second day, she says he didn’t come to class again, she said, but I think I saw him standing outside the class and when I started going over to the door he disappeared, and I said well I saw him on campus today too, so I said, you know, I’m going to try calling him and see what’s going on, I can’t imagine why he would be afraid to go in there, you know, he knows you … well, she ended up calling him at home, and what it was is when he was going to take her class again, he expected it to look exactly the same, the same students, the same people sitting in the same desks, the same room, everything, and he was afraid to go in the first day, so she suggested that he just go there first, and he take his seat …and he ended up doing fine (Community college disability coordinator, interview, August 24, 2016).

A student with autism may struggle with something that the professor is not aware of. Following up with either the student, the student’s parent, or the disability coordinator may lead to resolution of the issue. It is possible that the solution is as simple as the one the disability coordinator described. The first step is to reach out to the student and see if he can explain what is troubling him.

**Accommodations.** The disability coordinator will develop a list of accommodations for students with autism. One accommodation that emerged from the study as somewhat atypical, but impactful, is the awareness by the professor that a student with autism may need to access the professor frequently during office hours. Students with autism may possibly need clarification of
assignment directions or support in understanding a concept.

Both disability coordinators in this study reinforced that accommodations differ based on individual student needs. An understanding of the thought process engaged in by the disability coordinator from the community college gives the university professor contextual support for specific accommodations. The disability coordinator explained, “we would probably start out with considering testing outside of the class with extra time because there seems to be a pattern of anxiety” (Community college disability coordinator, interview, August 24, 2016). While a professor may not be surprised that a student with autism may have additional time as an accommodation, it may be surprising that the reason for the accommodation is anxiety, a comorbid mental health disorder.

The disability coordinator from the private university provided insight into her support for students with autism. She stated,

My biggest lesson is not to make any assumptions about what is going to be their most common accommodation, because it’s, of any other category of student that I work with, they are the most diverse in terms of their needs, um, so, I can say that one thing I do see in common is that all of them seem to benefit from something that is not even necessarily a formal accommodation, but a regular one-on-one meeting with me … for sure their first year here, um, but honestly some I’ve seen on a regular basis their whole four years here … depends, we start out weekly, start out weekly for sure that first year, and then we gauge it from there, but that’s one thing I’ve seen in common, is they need a touch point, and it may not be about an accommodation issue, and that’s ok, and most of the time it isn’t, it’s more about, um, executive planning, executive functioning, planning, using a planner, how to plan for college, how do they handle when they are assigned to a group
to do a group project, how do I communicate with my instructor when I really don’t know what they are talking about, what they want for this assignment, so it has to do with helping them not only become better planners, but also, and maybe we sit down and construct an e-mail together because they have a question about, for their instructor and don’t know how to approach them, um, not only that, but sometimes we’ve set up, regularly we set up meetings where it is the three of us, where it is the instructor, myself, and the student so we can um really help the instructor understand what is going to be most helpful to that student (Private university disability coordinator, interview, October 13, 2016).

Students with autism are a diverse population. Professors are encouraged to follow up with the disability coordinator so as to better understand each individual student. This can be complicated by the fact that accommodations for students with disabilities do not list the specific disability category. However, the disability coordinator can provide guidance as to the best methods to support a specific student without disclosing that student’s specific disability.

**Classroom management.** Classroom management is an aspect of education that is most likely not an aspect of training for which college professors are prepared. Professors may not even feel like classroom management should be necessary at this level of education. However, students with autism may benefit from having some supports in place to help them engage in instruction in a socially acceptable manner. One suggestion from the study is that professors develop a non-verbal cue if the student with autism is speaking out in class too often. A student may also have an agreed-upon strategy for handling sensory overload, such as taking a break outside the classroom. The disability coordinator is likely to have guidance as to how to handle situations in which a student with autism is relatively disruptive or self-focused.
The disability coordinator from the community college shared how she helped a student with autism who was speaking out excessively in class by having the professor develop a nonverbal cue for the student. She stated,

The ones that have histories of some behavioral issues in class, we talk about, um, the professor having some kind of non-verbal cue … that they use, I really need for you to just sit down and be quiet right and just jot a note or something and we’ll talk after class, or send me an e-mail, um, and most of them don’t want that, but a lot of them end up with it … and in that case I usually have to give [the professors] a heads up about what’s going on, sometimes, if the student is having a really hard time with that in class, I give them a 1-2-3-4 list about, this is what you have to remember, alright, I can only answer some of the questions, I have to let some of the other students answer some of the questions, if the professor gives me my cue, I need to stop … being verbal … and write down what I need to know, if I get mad in class I cannot cuss the professor out, I try to stay in class … I try to stay in class, but if I can’t, it’s better to leave class then to act out in class, I write this list sometimes for them (Community college disability coordinator, interview, August 24, 2016).

By giving the student a nonverbal cue, the professor can alert the student to behavior that may be disruptive to the class without bringing direct attention to the student.

The disability coordinator from the private university shared a similar strategy for supporting students with autism regarding off-topic or excessive comments. She stated,

Normally when I hear from instructors it’s because of behavioral things in class, so this student is just interrupting the class discussion all the time, what do I do, how do I do this … or the comments are just so off, they are not going with what we are talking about at
all, so what do I do about this, um, that would probably be the number one … thing that I hear when I do hear from faculty, we very rarely, I can think of one time in the last nine years that I’ve had an actual, more of a behavioral outburst in class … so I’ll suggest some things for each person, so for the instructor, I’ll encourage them to come up with some kind of gesture or even a phrase to say to the student that signals to the student, oh, they want me to stop, so, again, whether it is a phrase or a gesture, but something that not necessarily, not calling them out, ok, thank you [Danny], let’s now, let’s do this, you know, so whatever kind of statement so the student recognizes that gesture or statement, and then what I suggest for the students to do it to keep a notebook or paper with them, and write down that question or comment they wanted to say, um, so that then they can either address that, if they still need an answer to that, they can address it after class or during office hours (Private university disability coordinator, interview, October 13, 2016).

A strategy for redirecting students with autism when they have excessive calling out in class is to have a nonverbal signal that encourages the student to write down his questions and meet with the professor during office hours to address his concerns.

**CLS worker.** A student with autism may need a support person to help with executive function tasks, such as maintaining timeliness, breaking assignments into incremental parts, and understanding how to complete assignments. It emerged from this study that a college living support (CLS) worker may be integral to a student’s success in the postsecondary environment. Professors are encouraged to go outside the box in their support of students with autism by cooperating with support workers, who may be a parent, a tutor, or someone else. Professors may encourage the support worker to communicate via the student’s university e-mail to ensure
that privacy rules are followed.

The disability coordinator from the community college explained parent involvement as being a common support for students with autism. She stated,

With autism, that’s the one disability where we kind of go outside the box a little bit and have more parents involved than we do …. They tend to do ok once they are here for a little bit, but we have much more parental involvement at the front door, usually when it has to do with autism (Community college disability coordinator, interview, August 24, 2016).

For young adults, attending college is a time of independence and autonomy from their parents. However, students with autism benefit from extending the period of time during which they transition to adulthood to support developmental delays. If a student is struggling, the professor could suggest that the student sign a waiver allowing communication directly with parents. Alternatively, the professor could invite the student to bring his support person to a meeting with the professor. Students with autism may have had a team of support professionals during high school. In the phenomena that has been described as falling off a cliff, students abruptly lose that comprehensive support upon graduating from high school. I encourage professors to be flexible regarding the additional support that a student with autism may need.

**Familiarity with autism.** College professors are encouraged to develop an understanding of autism and strategies to support postsecondary students with autism. If the student has disclosed a diagnosis of autism, encourage the student to explain how the disorder impacts his ability to be successful in college. If the student has a support person, the results of this study indicate that professors who take the opportunity to meet with the support person and to answer questions as necessary will have students who are more likely to succeed in college.
coursework.

Jimmy’s mother shared her thoughts on how she would change university policy if she were able to. She stated,

I think I might flat out change the confidentiality. I think the confidentiality rule, in at least my son’s specific autism case, usually wind up hurting rather than helping. I think the more kids know about [Jimmy], the easier it is for them to get to know him, and, I think that the teacher ought to be able to say [that he is a student with autism] … Yes, I mean that’s the way we have raised him to identify if he needs to, to identify, well he don’t walk around and tell people he’s autistic … But I think it’s helpful for kids that maybe are a little unsure about … Seeing that he is a little different, aren’t you, just a little bit different (Jimmy’s mother, interview, August 17, 2016).

To which Jimmy answered, “Yeah, a little bit different” (Jimmy, interview, August 17, 2016).

Students with autism may present as a bit different. If a student chooses to disclose his disability to the professor, it allows the professor to seek out additional information about autism.

Danny’s tutor shared her thoughts on the importance of professors becoming more familiar with autism when asked how she would change policy to improve postsecondary education for students with autism. She stated,

The first thing I’d do is professors would be required to have some type of lecture series on autism, by somebody from maybe an autism center or something like that, and then maybe even get to talk with students who are autistic, who have given that permission to be out and open about it, just to talk about those kinds of things … so kind of teaching professors, too, if you start noticing a kid being agitated, what can we do to get them feeling [like they are] in a safe place, so I think having those lectures and education on
those kinds of disabilities really brings it to the forefront (Danny’s tutor, interview, January 15, 2017).

During this study, participants shared several situations during which a student with autism was struggling in class and simply by having the professor better understand that the student’s disposition and behavior were not an indication of disinterest in the class led to the issue resolving and the student successfully completing the class.

Mental health. Students with autism may possibly have a comorbid mental health disorder. Professors are advised to be aware of the impact that a mental health disorder may have on a student’s engagement in the classroom. For example, a disability coordinator described a student with autism who had a comorbid anxiety disorder. He was successful in a professor’s course and so registered for a subsequent course with the professor. However, on the first day of class, the student went to the door of the classroom and did not go in to class. He was not able to tolerate the fact that even though the new course had the same professor, there were different students in the room who were sitting in different seats. The disability coordinator arranged for the student to go to class early so he could sit in his regular seat which resolved this issue for the student. Each student with autism has different and unique needs that may require additional support.

Social. Students with autism may need additional support handling issues requiring social interaction, such as completing group assignments. The students may have a limited ability to initiate social contact, so class-based interaction with peers, such as working on problems together or encouraging them to exchange phone numbers for peer support may be beneficial.
Jimmy’s mother suggested that professors address socialization pedagogically to support students with autism. She shared a practice of the math professor having the students work problems as a group. She stated, “they all kind of rallied around him a bit and it was helpful” (Jimmy’s mother, interview, August 17, 2016).

However, group interaction has the potential of being difficult for students with autism. The disability coordinator at the community college described one professor’s strategy to support a student with autism while ensuring that the academic goals of the course were met. She stated, [The student with autism] can’t handle being in a small group and that’s what interpersonal communication is … I don’t know how not to put him in a group, she said, I was thinking I have a student in my class who’s … an older student and he’s just retired from the military, he was in the army, he wears his fatigues and stuff to class and [the student] seems to be really interested in him … and his stories, she said I was thinking about putting them in a group of just two, just the two of them, what do you think about that? I said, well, you know, ask [the student] how he would feel about that, but [the student] ended up doing ok in there, in his regular group (Community college disability coordinator, interview, August 24, 2016).

When asked how she would support students with autism if she were in charge of university policy, Jimmy’s mother stated,

I think I’d still … come up with some way … and I say this because I like lecture classes myself, but come up with some way of modifying that, that almost forces you to at least get to know … [to] interact with the peers in class … a few of the peers in the class, maybe not everybody, but three, four, five people … that you might actually get to know a little better … I would come up with, even though I hate group assignments, I think for
autistic, I think that would be the best way to get him more involved and getting, give the other people a chance to kind of get to know him a little bit (Jimmy’s mother, interview, October 12, 2016).

An assertion of this study is that tension surrounds the experience of students with autism in postsecondary education. The topic of socialization leads to tension for the student and the professor. For the student, it may indicate a tension between his preferred style of socialization, which may be engaging with peers on the internet, with pedagogical decisions by the professor, such as the assignment of group projects. Professors are encouraged to be flexible regarding group projects without affecting the rigor of the assignment.

**Implications for PolicyMakers and Legislators**

**Disclosure.** A barrier for students with autism in postsecondary education is the interpretation of traits of autism as disinterest or disengagement with course content. Policy makers are challenged to address this barrier while following national privacy guidelines, which is a challenging goal. However, many students with autism struggle with the interpretation of their behaviors if the professors are not aware of their specific disabilities. A suggestion would be for policymakers develop guidelines for a student’s disability to be disclosed on their accommodations letter unless the student specifically opts out of that disclosure. Additionally, a more generalized description of the student’s disability could be used if preferred, such as stating that the student has a social and communication disorder, to guide support while maintaining student privacy.

**Executive function support.** Results from this study indicate that students with autism require support for issues related to executive function and self-advocacy. This role was filled by the mother of two students and a privately-hired tutor of another. The postsecondary
experience of students with autism would be greatly enhanced if there was a state policy (and sufficient funding) providing this type of support, either through the vocational rehabilitation or a Medicaid waiver program. Policy makers should ensure that there is sufficient funding to provide this service to students who may be fully capable of completing the academic aspects of college, but may fail out simply because of their difficulties with executive function, self-advocacy, and social aspects of the postsecondary experience. For example, a student may need support with developing study plans, formulating e-mails to professors, or breaking an extended assignment into manageable parts.

**Eligibility programs.** Support programs for students with autism in postsecondary education are considered eligibility programs. It is possible that a student with autism may not qualify due to family income restrictions or availability of resources to support a specific program, such as vocational rehabilitation. Policymakers and legislators should ensure that there are sufficient funds and programming to support the postsecondary education of students with autism.

**Extended time for degree completion.** Students with autism would benefit if the financial aid regulations allowed for completing a degree on a part-time basis. A student with autism may need to take two classes per semester as opposed to four or five. One student in the study timed-out of financial aid support because he was not enrolled in college full-time.

**Vocational rehabilitation.** The vocational rehabilitation program offers support for students with disabilities who are attending college. However, funding for the program has been reduced to the point that a disability coordinator explained that students who are deaf are no longer provided interpreter services by vocational rehabilitation. Students in this study did not participate in vocational rehabilitation for various reasons. One student’s mother stated that he
did not qualify due to family income, another student refused to participate because vocational rehabilitation was for students with more severe disabilities (from his perspective), and the third student’s mother considered vocational rehabilitation, but due to the length of time it took to become involved combined with the financial status of the family, elected not to pursue it further.

The results of this study indicate that a partnership between vocational rehabilitation and postsecondary institutions may be beneficial. An exemplar of transition partnership is the Oregon Youth Transition Program (YTP) which is funded through Vocational Rehabilitation (www.ytp.uoregon.edu). YTP staff support students regarding their transition goals during high school as well as during the first couple of years of either postsecondary education or employment. A YTP staff member could provide support for executive function skills while also preparing the student to function more independently in a scaffolded manner.

Implications for Research

Executive function. The most significant implication for research from this study is the importance of executive function in the postsecondary experience and the potential impact of deficits in executive function on uncertainty regarding independence after the completion of a degree. The literature review for this study of research on students with autism participating in postsecondary education did not reveal an emphasis on executive function that the results of this study indicate. A possible research question is: How does direct instruction in executive function skills impact self-sufficiency after completion of a postsecondary degree?

Accommodations. Students with autism receive accommodations for their disability through the university disability center. The two disability coordinators interviewed for the study were similar in that each considered the choice of accommodations to be individualized as
each student with autism has different needs. However, each also had several strategies that were unique, such as writing that a student may need to attend office hours more frequently than other students for clarification of course content. A suggested research question that would be beneficial for practice is: What types of accommodations are suggested for students with autism in postsecondary education?

A second finding that emerged from the study is that professors are more likely to be supportive of accommodations if they are more familiar with a student. Also, an online class may satisfy the interpersonal interaction issues for a student with autism, leading to the student not needing as many accommodations. A possible research question is: What is the difference between accommodations used for students with autism in in-person classes versus online classes?

**Assumptions about autism.** As a parent of a child with autism attending postsecondary education, I was not surprised that the results indicated the need for support. What did contrast with my own assumptions was the concept that postsecondary education was not a recommendation by the disability coordinators simply for the purpose of socialization. This was further supported by the finding that students with autism were content with their preferred style of socialization. Each of the parents in the study yearned for their son to be more social, but understood the barriers that their sons had with socialization. However, the students themselves were content with their style of socialization, to the point where forced socialization created significant frustration. An area for possible research would consider how the findings of this study contrast with societal assumptions about autism. An interesting topic for further research would be how societal assumptions impact the postsecondary experience of students with autism.

**Barriers.** A barrier that emerged in the study was the impact of difficulties with
communication and socialization on successful completion of group projects during postsecondary education. An interesting topic for further research would be how difficulties with communication and socialization impact the ability to complete group projects for students with autism in postsecondary education.

The legal protections for students with disabilities in postsecondary education are different than in high school in relation to disruptive behaviors that are a manifestation of a student’s disability. Data in this study indicate that it is possible for a student to be suspended from postsecondary education due to a behavior or a threat that potentially disrupted the learning of other students. An interesting topic for further research would be how postsecondary education for students with autism is impacted by manifestations of behaviors that potentially impede the learning of other students.

**Behavioral change.** The students in this study each showed some level of behavioral change as they became more familiar and comfortable with the demands of postsecondary education. However, that behavior change is at a pace that was much slower than that of their general education peers. An interesting topic for further research would be how a student with autism’s self-advocacy, self-determination, and executive function skills develop over the course of the experience in postsecondary education.

**Culturally sensitive lens.** The findings of this study encourage scholars to consider students with autism through a culturally sensitive lens. By understanding the preferred lifestyle of students with autism, professors, disability coordinators, and policy makers can better support their experience in postsecondary education. For example, the students in this study were content with their style of socializing. Attempts to force students into social situations that are uncomfortable for them would be an example of not considering their neurodiversity.
interesting topic for further research is how the consideration of students with autism through a culturally sensitive lens impacts consideration of support programs developed by disability coordinators.

**Dependence.** The students in this study all lived at home while attending postsecondary education. The disability coordinator at the community college recommends that students gradually take on the responsibilities of college by living at home and taking a reduced load during early semesters to ensure that the student is successful. An interesting topic for further research is consideration of the difference in successful completion of a postsecondary degree for students living at home versus students living on campus.

**Familiarity.** A finding that emerged from the study is the need for professors to become more familiar with autism as a disability and with strategies to best serve students with autism in the classroom. The disability coordinator at the private university described a panel that she formed of students with disabilities to describe their experiences with attending postsecondary education. The panel was well attended by university staff and well received by those in attendance. Unfortunately, not a single professor chose to attend. An interesting topic for further research is how professors are accessing information to better serve students with autism who are attending postsecondary programs?

**Mental health.** Comorbid mental health disorders impacted the postsecondary experience of each of the students in the study. Possible research questions exploring this topic include: How does mental health impact the postsecondary experience of students with autism in postsecondary education? What type of mental health services in the postsecondary setting successfully support students with autism in the completion of a postsecondary degree? How does living on campus differ from living at home in regard to mental health concerns for students
with autism attending postsecondary education? What is the impact of professional development on the perspective of postsecondary professors regarding the experience of students with autism in their courses?

**Parental involvement.** Students in this study had significant parental involvement and support. A consideration for future research is whether that involvement was appropriate for the developmental level and contextual situation of the student or whether the parenting could be considered overinvolved. The disability coordinator from the community college was describing the goal of disengaging parents from their students while understanding that some students will continue to need parental support. She stated,

> the goal is to get them disengaged if it’s possible, and it is, about 50% of the time, probably 25% of the time, they are not going to be disengaged no matter how hard we try, and 25% of the time they need to be engaged (Community college disability coordinator, interview, August 24, 2016).

A consideration for future research is the impact of parental involvement on students with autism participating in postsecondary education. An interesting question for further research is how the level of parental involvement impacts the postsecondary education of students with autism.

**Socialization.** An assertion of this study is that students with autism engage in their preferred style of socialization and are frustrated when forced to engage in socialization outside of their preferred manner. A consideration for future research is the integration of this finding with the topic of neurodiversity. An interesting question for further research is how students with autism perceive the socialization demands of postsecondary education and how those demands impact their preferred style of socialization.

**Support.** The research question for this study was: How do male students with autism
experience the academic, social, and self-advocacy needs of postsecondary education from the perspectives of the students themselves, their parents, their professors, their disability coordinators, and their tutors? The answer to the question that emerged from the data was that they experience postsecondary education with support for executive function and with an uncertainty of what may happen after degree completion.

Further research is indicated in all areas regarding executive function support for students with autism attending postsecondary education. Possible research questions include: How do mothers support their student with autism during postsecondary education? Does the level of support external to the university impact successful completion of a postsecondary degree for students with autism?

**Uncertainty.** Completion of a postsecondary program leads to uncertainty for each of the students in this study. Significant uncertainty was evident regarding potential employment and the possibilities of living independently. Possible research questions are: What are the outcomes for students with autism who successfully complete a postsecondary program? Where are students with autism living after successfully completing a postsecondary program? Is there a difference in living arrangements between students who complete a postsecondary program and those who do not complete a postsecondary program? Is there a difference in employment between students who complete a postsecondary program and those who do not complete a postsecondary program? Is there a relationship between self-sufficiency after completion of a postsecondary degree and the direct instruction in executive function skills during the postsecondary experience?

**Study Limitations**

A limitation of this study was that the professors for Victor, the student who was taking
only online courses, refused to participate.

A second limitation is the potential bias inherent in my role as the mother of a student with autism attending a postsecondary institution. I addressed this limitation by intentionally limiting findings to themes that emerged through the analytic journal writing process and by seeking regular guidance from a peer who was also completing a dissertation as well as from a committee member who enlightened me as to areas of potential bias that I had not noticed. Additionally, I had participants confirm their answers to repeated interview questions in a member checking process.

Conclusion

Male students with autism completed postsecondary education with support for skills requiring executive function. The level of support ranged from significant, with a student’s mother acting as a surrogate executive function, to limited, with a student’s mother checking his e-mails daily. However, the level of support did not impact the level of uncertainty regarding the future. There was a level of high uncertainty for the future for each of the three students.

Comorbid mental health diagnoses impacted the experience of male students with autism in postsecondary education. Mental health concerns were one of several areas of tension for individuals supporting students with autism. A source of frustration for students was forced socialization outside of their preferred style of socialization.

Male students with autism have the potential of successfully completing postsecondary education. However, consideration should be given to the impact of executive function on that experience, as well as the impact of developing executive function on anticipated levels of self-sufficiency upon graduation.

This study demonstrates that students with autism need support with executive function
skills as they engage in postsecondary education. Over time, their need for support decreases. Direct instruction in executive function skills may not only improve student outcomes in postsecondary education, it may also impact engagement in society after graduation. This study also reinforced the concept of neurodiversity. Students with autism fall on a continuum of normal development; support for students with autism may very well support another struggling college student who is not receiving accommodations for a disability.

The significance of executive function skills as a finding of this study has the potential to influence other streams of research, such as research on the retention rate of young men in college. Further research regarding the impact of executive function skills, interventions to support executive function development, and expectations as to the age at which the prefrontal cortex may be considered mature enough to support this development will impact the success of students with autism in postsecondary education.
Appendix A: Student and Parent Semi-Structured Interview Protocols

Questions for the College Student with Autism

The following questions were asked at the first interview:

- Why did you decide to go to college?
- Who supported you in your decision to go to college?
- Describe where you are living. Why did you choose to live there?

The following questions were asked at each of the four interviews:

- What do you think about college so far?
- What is the most fun about college?
- What do you like least about college?
- Describe things about college that annoy you.
- Describe the classes you are taking and a typical day. How many classes? What content? Do you enjoy one more than another?
- How are you doing in your classes?
- Are you feeling better or worse than the last time we met?
- Do you think the professor is giving the right amount of assignments, too many, or too few? Explain your answer.
- What do you think about your classmates? Have you met with any classmates outside of class?
- Have you had any group projects? How did they go?
- How are you feeling in general? Do you feel stressed? Describe how you are feeling.
- Tell me about your routine outside of school. How much time do you spend studying each week?
Who helps you when you have problems? Describe a problem you have had and what happened.

Have you met with the disability coordinator ever/recently? Was the meeting productive? What services are they providing?

How helpful have your professors been?

Tell me something else you would like to share about your college experience.

Questions for the Parent of a College Student with Autism

The following questions were asked at the first interview:

Describe the student’s path through high school and into college. At what point in your child’s life did you consider college as an option for him?

Why do you think that your son went to college?

Did he consider other options, such as going straight into employment?

What type of employment experiences has your son had (if any)?

Describe his high-school coursework. Do you feel it adequately prepared him for the rigor of college classwork?

How did your son do on the ACT? Which special education accommodations did he have for the ACT?

Was a community college your son’s first choice? Explain how he decided to attend this specific institution.

How much support did you son need during the application, registration, financial aid, and other logistical processes in preparation for attending college? Who provided that support? Did you have any problems with that process?

Has your son signed the document that allows you to interact with the university on his
Where is your son living? Did you consider having your son live on campus? Describe that thought process.

Has your son registered with the disability office? What do you think of that process?

Has your son told his professors that he has autism? Are they aware of his accommodations as provided by the disability office? Has he in the past taken advantage of those accommodations?

What are your son’s academic goals?

The following questions were asked during one interview to explore self-determination and are cited from The Arc’s Self-Determination Scale: Adolescent Version (Wehmeyer & Keichner, 1995).

1. I make my own meals or snacks.
2. I care for my own clothes.
3. I do chores in my home.
4. I keep my own personal items together.
5. I do simple first aid or medical care for myself.
6. I keep good personal care and grooming.
7. I make friends with other kids my own age.
8. I use the post office.
9. I keep my appointments and meetings.
10. I deal with sales people at stores and restaurants.
11. I do free time activities based on my interests.
12. I plan weekend activities that I like to do.
13. I am involved in school-related activities.

14. My friends and I choose activities that we want to do.

15. I write letters, notes, or talk on the phone to friends and family.

16. I listen to music that I like.

17. I volunteer in things that I am interested in.

18. I go to restaurants that I like.

19. I go to movies, concerts, and dances.

20. I go shopping or spend time at shopping centers or malls.

21. I take part in youth groups.

22. I do school and free time activities based on my career interests.

23. I work on school work that will improve my career chances.

24. I make long-range career plans.

25. I work or have worked to earn money.

26. I am in or have been in career or job classes or training.

27. I have looked into job interests by visiting work sites or talking to people in that job.

28. I choose my clothes and the personal items I use every day.

29. I choose my own hairstyle.

30. I choose gifts to give family and friends.

31. I decorate my own room.

32. I choose how to spend my personal money.

33. I usually do what my friends want or I tell my friends if they are doing something I don’t want to do.

34. I tell others when I have new or different ideas or options or I usually agree with other
peoples’ opinions or ideas.

35. I usually agree with people when the tell me I can’t do something or I tell people I think I can do something that they tell me I can’t.

36. I tell people when they have hurt my feelings or I am afraid to tell people when they have hurt my feelings.

37. I can make my own decisions or other people make decisions for me.

38. Trying hard at school doesn’t do me much good or trying hard at school will help me get a good job.

39. I can get what I want by working hard or I need good luck to get what I want.

40. It is no use to keep trying because that won’t change things or I keep trying even after I get something wrong.

41. I have the ability to do the job I want or I cannot do what it takes to do the job I want.

42. I don’t know how to make friends or I know how to make friends.

43. I am able to work with others or I cannot work well with others.

44. I do not make good choices or I can make good choices.

45. If I have the ability, I will be able to get the job I want or I probably will not get the job I want even if I have the ability.

46. I will have a hard time making new friends or I will be able to make friends in new situations.

47. I will be able to work with others if I need to or I will not be able to work with others if I need to.

48. My choices will not be honored or I will be able to make choices that are important to me.
The following questions were asked during each of the four interviews:

- Do you feel that your son’s supports from the disability center are adequate for his needs?
- Have you had any interaction with your son’s professors? Describe your perspective as to how the professors are supporting your son.
- Discuss the coursework your child is taking. How many courses? What type of courses? The decision-making process leading to that coursework?
- How is your son managing the routine of going to college? If this is not his first semester, how does the routine of this semester compare to the routine of previous semesters?
- What does your son like to do when he is not on campus?
- How is your son handling the pressure of college? Is he keeping up with his assignments and study requirements?
- How does your son handle changes in the intensity of requirements during the course of the semester, such as multiple mid-terms and final papers and exams?
- Describe any interactions that you are aware of with peers on campus. Has your son participated in a group project during a class? Has he participated in any extra-curricular or other social activities on campus?
- Has your son made any friends on campus?
- Describe any barriers you can think for students with autism attending college.
- What would you change for students with autism if you were president of the university?
Appendix B: Professor Semi-Structured Interview Protocol

Questions for the Professor of Student with Autism

The following questions were asked at each of the two interviews:

- Describe your experience with this student with autism in your classroom.
- Describe the student’s accommodations as arranged by the disability center.
- What additional supports, if any, do you feel are necessary for the student?
- Have you had any group assignments? How has the student handled those situations?
- Does this student’s needs seem to be about the same or significantly different than the needs of other students with autism you have had in your classroom.
- How is the student responding to any recent changes in pace or intensity?
- What have been the greatest challenges for the student in your classroom?
- What have been the most successful moments for the student in your classroom?
Appendix C: Disability Coordinator Semi-Structured Interview Protocol

Questions for the Disability Coordinator

- Could you discuss any thoughts you have for each student’s progress and/or areas of concern?
- Each of my students has a strong support system. Have you had any students with autism who have not had strong support from their family? Describe their experiences.
- When do you get the most push-back regarding accommodations for students with autism? One of my students was encouraged not to have extended time for tests for an online class. How complicated is it to set individualized times for online tests?
- How do you see students with autism handling issues related to time, such as meeting deadlines, pacing their studies, and responding to crunch times?
- How do you see co-morbid mental health concerns, such as OCD, anxiety, or depression, affecting the college experiences of students with autism?
- What challenges and/or success do students with autism share with you?
- What challenges and/or success do professors share with you?
- What type of interaction have you had with the parents of a student with autism?
- What services do you feel that students with autism need, but they either are not available or the students do not take advantage of them?
- What support do you think that professors with students with autism in their classroom need and it either is not available or they do not take advantage of it?
- If you were president of the university and could change the structure of the college to better serve students with autism, what would you change?
Appendix D: Tutor Semi-Structured Interview Protocol

Questions for Tutor of Student with Autism

- Do you feel that the accommodations in place for your student are sufficient?
- Have you had any interaction with your student’s professors? Describe your perspective as to how the professors are supporting your student.
- How is your student managing the routine of going to college? How does the routine of this semester compare to the routine of previous semesters?
- How is your student handling the pressure of college? Is he keeping up with his assignments and study requirements?
- How is your student handling changes in the intensity of requirements during the course of the semester, such as multiple mid-terms and final papers and exams?
- Has your student discussed any group projects that he has worked on?
- Describe any barriers you can think for students with autism attending college.
- What would you change for students with autism if you were president of the university?
Appendix E: Top 20 Cross-Case Categories for Each Participant

<table>
<thead>
<tr>
<th>Jimmy</th>
<th>Danny</th>
<th>Victor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodations</td>
<td>Abruptly Inflexible</td>
<td>Abruptly Inflexible</td>
</tr>
<tr>
<td>Barriers</td>
<td>Autonomy</td>
<td>Behavioral Change</td>
</tr>
<tr>
<td>Compliant</td>
<td>Behavioral Change</td>
<td>Disinterested</td>
</tr>
<tr>
<td>Dependence</td>
<td>Conflict</td>
<td>Dramatic</td>
</tr>
<tr>
<td>Familiarity</td>
<td>Dependence</td>
<td>Elastic Decisions</td>
</tr>
<tr>
<td>Frustration*</td>
<td>Disinterested</td>
<td>Executive Function</td>
</tr>
<tr>
<td>Insulation</td>
<td>Executive Function</td>
<td>Factual Knowledge</td>
</tr>
<tr>
<td>Mental Health*</td>
<td>Frustration*</td>
<td>Failure</td>
</tr>
<tr>
<td>Postmodern Epistemology</td>
<td>Grind</td>
<td>Frustration*</td>
</tr>
<tr>
<td>Protect from Failure</td>
<td>Grudgingly Compliant</td>
<td>Grind</td>
</tr>
<tr>
<td>Second-hand Stress</td>
<td>Isolated</td>
<td>Grudgingly Compliant</td>
</tr>
<tr>
<td>Social*</td>
<td>Mental Health*</td>
<td>Intolerant</td>
</tr>
<tr>
<td>Success</td>
<td>Not in the Mood</td>
<td>Mental Health*</td>
</tr>
<tr>
<td>Support*</td>
<td>Pressure</td>
<td>Philomath</td>
</tr>
<tr>
<td>Tension</td>
<td>Scapegoat</td>
<td>Pressure</td>
</tr>
<tr>
<td>Time</td>
<td>Self-Determination</td>
<td>Scapegoat</td>
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<tr>
<td>Traditional Epistemology</td>
<td>Social*</td>
<td>Social*</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>Support*</td>
<td>Support*</td>
</tr>
<tr>
<td>Versus</td>
<td>Tension</td>
<td>Uncertainty</td>
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<tr>
<td>Zeitgeber</td>
<td>Zeitgeber</td>
<td>Versus</td>
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</table>

Note: *Identifies a category that was present in the top 20 for each case.
References


doi:10.1177/1088357614523121


doi:10.1017/S0954579408000370


Flanagan, & G. R. Ruth (Eds.), *On your own without a net: The transition to adulthood for vulnerable populations* (pp. 1-26). Chicago: University of Chicago Press.


Sztatmari, P., Georgiades, S., Bryson, S., Zawaigenbaum, L., Roberts, W., Mahoney, W., . . .


disabilities three-years after high school: The impact of self-determination. *Education
and Training in Developmental Disabilities, 38*(2), 131-144.

follow-up study of youth with mental retardation or learning disabilities. *Exceptional
Children, 63*(2), 245-255.

Will, M. (1983). OSERS programming for the transition of youth with disabilities: Bridges from


instruction for individuals with developmental disabilities: A meta-analysis. *Exceptional

Prevalence of autism in a U.S. metropolitan area. *Journal of the American Medical
Association, 289*(1), 49-55.


prevalence of autism and other developmental disabilities following questionnaire
changes in the 2014 National Health Interview Survey*. Hyattsville, MD: National Center
for Health Statistics.

*Journal of Special Education Leadership, 24*(2), 92-103.