2017

Educational Predictors for Postsecondary Living Status

Irina Cain

Virginia Commonwealth University

EDUCATIONAL PREDICTORS FOR POSTSECONDARY LIVING STATUS

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

by

Irina Cain
Bachelor of Arts, Alexandru Ioan Cuza University, 2006
Master of Education, University of Mary Washington, 2011

Director: Colleen Thoma, Ph.D.
Professor and Chair
Department of Counseling and Special Education

Virginia Commonwealth University
Richmond, Virginia
April, 2017

Acknowledgement

My dissertation topic is the result of interacting with people with disabilities and their families, after years of exploring different research avenues. I am forever grateful to my mentor, Colleen Thoma, who patiently allowed me to pursue these lines of research until I found one I felt truly passionate about, offered guidance along the way, and showed me more kindness and support than I ever thought possible.

I am also grateful to my committee members who shaped the way I think about my topic and research in general. John Kregel and Michael Gamel-McCormick helped me situate my study in the larger historical, political, and conceptual contexts. Kevin Sutherland helped me think deeply about every decision I made along the development of my study, and putting the implications of my findings in context. Michael Broda helped me get excited about learning to use a new software package and provided easy to follow feedback and suggestions to make my study more rigorous.

I would also like to thank Chin-Chih Chen, who introduced me to the intricacies of working with a large database and exposed me to new ways of thinking about research and teaching. I furthermore appreciate the conversations I had with fellow doctoral students about various methodologies and areas of research.

Last but not least, I am grateful to my family for unwavering support through many life and career transitions.

Dedication

       I would like to dedicate this dissertation to my daughter Iris. The message my work conveys is that everybody can achieve a life that reflects his or her values and wishes. I hope this might serve as an inspiration to you as you grow up to believe in your potential of becoming anything you set your mind to.

Table of Contents

List of Tables

List of Figures

Abstract

EDUCATIONAL PREDICTORS FOR POSTSECONDARY LIVING STATUS

By Irina Cain, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2017

Director: Colleen Thoma, Ph.D.
Professor and Chair
Department of Counseling and Special Education

This study was performed as the result of gaps in the literature in the area of transition to independent living (IL) using secondary data from the National Longitudinal Transition Study 2 (NLTS-2). Its findings identify individual, skills, family, and school factors that predict postsecondary living status and moderators of the relationships between predictors and the outcome. Specifically, results indicated the following factors as predicting postsecondary living status: individual factors (ethnicity and disability label), skills (self-care, functional mental, personal autonomy, self-realization, and social), family factors (parental expectations and parental involvement in school), and school factors (student's role in transition planning and having IL as the primary IEP goal). The following factors also emerged as moderators: ethnicity, disability label, mental skills, social skills, personal autonomy, and having IL as the primary goal. Performing analyses on secondary data, although providing the advantage of large numbers of participants, also result in limitations that were considered when making recommendations. Future research should investigate the accuracy of findings regarding skills predictors, and probe for better understanding of decision making during transition planning and participants' experiences. Policy should include transition planning specifically for IL and postsecondary

follow-up for this outcome, while practice should focus on incorporating planning for IL during transition planning, addressing cultural diversity in transition, and helping parents develop high and realistic expectations for their children.

Chapter I

Introduction

Residential status is generally regarded as an adult supports issue, and excluded from the realm of education research, with few studies examining the effect of incorporating practices specific for Independent Living (IL) into transition planning. The focus of current research is on preparing students for employment or postsecondary education, with little regard to identifying the skills that can be taught in school to prepare students for living independently. This dissertation aims to fill some of these deficits in current research by identifying transition predictors for postsecondary living status.

Chapter I outlines the need for more targeted research in IL, along with describing the current historical context of related legislation and living arrangements for people with disabilities. Chapter II contains a summary the results of a systematic literature review on practices that can be employed in schools to enhance a student's ability to live independently after exiting school. Another component of the review is assessing the prevalence of IL across studies, in order to further highlight the need for interventions that promote better IL outcomes. The goal is to identify gaps in knowledge in terms of independent living training that, once filled, would enable the field of special education to better address the needs of students with disabilities to enhance postsecondary IL outcomes. The literature review includes studies with participants representing all disability categories, although a majority of the intervention studies

focuses on students with Intellectual Disability (ID) or Autism Spectrum Disorders (ASD), who tend to have the lowest achievement of independent living of all disability categories.

After gaps are identified in Chapter II, Chapter III includes the methodology of a study that answers some of the main questions identified in the literature review. Specifically, this study identifies transition related predictors for postsecondary living status from four domains: individual characteristics, skills, family, and school, along with testing for moderation effects to further understand the relationships between these factors.

Chapter IV provides a detailed description of findings, and Chapter V a discussion and implications for findings.

1.1 Statement of Problem

Living in the community has long been central to youth with disabilities' quality of life (Halpern, 1985) and is considered a human right (ADA, 1990). Also, living independently from one's family is regarded as a milestone in becoming an adult, along with financial independence, self-sufficiency, marriage, and parenting (Settersen, 2006; Chambers, Rabren & Dunn, 2009). However, many people with disabilities are living with their families well into adulthood (Newman et al., 2010). Braddock and Rizzoli (2013) estimate that as much as 72% of people with disabilities live with a family caregiver. This phenomenon can become a societal problem considering that the median life expectancy for people with disabilities has increased over the last decades and aging families are faced with caring for adults with disabilities (Gray et al., 2014). After families can no longer care for their family members with disabilities, there is increased risk that people with disabilities would be placed under state guardianship (Glen, 2015), which decreases their community participation and engagement, leading to poorer quality of life (Blank & Martinis, 2015; Shogren & Wehmeyer, 2015).

In addition to changes in life expectancy, the trend for people with disabilities living in institutions shows a steady decline, mostly because of funding, as it is more cost-efficient to provide services in the community (Braddock et al., 2015). Funding initiatives began in the 1950s through Medicare funds, dispersed to provide services that can be used in community settings such as supporting a personal care assistant (Fleischer & Zames, 2012). Although funds could have been used to provide support for living in the community, the medical model used to identify services constituted a barrier to living in the community. The requirement of having physicians prescribe services had limitations in terms of who could provide services and where. In 1993 the Congress yielded to the request for more flexible funding and added personal care to the list services covered under the Medicaid state plans (Young et al., 2013). The *Olmstead v. L.C. and E.W.* landmark decision made in 1999 further reinforced the Title II of the Americans with Disabilities Act (ADA, 1990) stipulations that services for people with disabilities should be provided in the least restrictive environment. This decision found placing people with disabilities in segregated setting illegal if treatment professionals determined that the community setting was appropriate and the person with disabilities wished to be served in the community. Although important, these policies do not make the provisions of services in the community mandatory for states, but rather provide a model for how services should be provided.

So the question arises, are people with disabilities prepared to live independently or semi-independently once they finish school? Do they know how to access resources to acquire residential support? These questions are at the forefront of caretakers' worries (Clegg et al., 2008) and should concern society at large. The study will investigate the extent to which certain individual, family, and school factors predict postsecondary residential status.

Historical Progression of Research on Independent Living

Stancliffe & Lakin (2007) describe the research on independent living as ahead of societal perceptions and policy regarding people with Intellectual and Developmental Disabilities (IDD). Initially, public perception was based on attitudes alone, without the support of scientific proof. People with disabilities were excluded from social life, and viewed as unable to care for themselves, needing intensive supports provided in asylums or other forms of institutional care (Ianacone, 1977). Early studies on deinstitutionalization showed that those leaving institutions without formal follow-up support fared better than expected (Fernald, 1919). Studies throughout the 20th century supported that view (Cobb, 1972), but "better than expected" still did not mean "good", because people with disabilities experienced low rates of a stable life in the community and low quality of life (Edgerton, 1990).

Nowadays, few sources track the living status of people with disabilities. In the more recent research, there is an increased emphasis on employment as a measure of integration and independence (Bekemeyer, 2009). Although financial independence offers a logical proxy for residential independence, it is a poor measure of integration and independence for those who choose not to work or do not need to work, but live independently in their community (Bekemeyer, 2009). Moreover, there are also those described as being in the "just workers" category: people who are employed but are unwilling or unable to live independently (Janus, 2009).

Policy Addressing Residential Independence

Independent living is a civil rights issue, and is addressed in a number of laws, which are not specific for people with disabilities: Title VI of the Civil Rights Act of 1964, Section 109 of the Housing and Community Development Act of 1974, and the Age Discrimination Act of

4

1975. However, there are other laws that include disability as a protected category: the Fair Housing Act enacted as Title VIII of the Civil Rights Act of 1968 and the Architectural Barriers Act of 1968 (U.S. Department of Housing and Urban Development, 2016). These laws provide protections for people who wish to live independently, and require that buildings designed, built, altered, or leased with federal funds be accessible to everyone. Other civil rights address antidiscrimination in general for people with disabilities. Title II of the ADA of 1990 and Section 504 of the Rehabilitation Act of 1973 are intended to promote access to IL as a main goal.

For children and youth from birth through age 22 the Individuals with Disabilities Education Improvement Act of 2004 (IDEA) also holds IL as one of the three outcomes students are prepared for during their time in school, along with employment, postsecondary education, and recreation and leisure (National Transition Network, 1997; Wagner et al., 1991).

In addition to legislation, there are also federal and state policies regarding the use of Medicaid funds to support a personal care attendant providing IL services. As mentioned, the Olmstead decision of 1999 also directly impacts the residential options of people with disabilities.

Benefits of Independent Living

Living in the community holds many benefits compared to living in an institution. In a review of studies investigating the effects of deinstitutionalization on people with ID across countries, Kozma, Mansell, and Beadle-Brown (2009) found that community based services are superior to congregate arrangements in six of nine domains; the domains where people living in the community outperformed those in institutions are: choice making, larger social networks, community participation, learning new skills and reinforcing those already learned, and satisfaction with their living arrangements. The three domains in which those living in

institutions outperformed those living in the community are challenging behavior, the use of psychotropic medications, and mortality. Interestingly, the authors found similar results from studies across countries with different welfare arrangements, socioeconomic context, and service structure (Kozma et al., 2009).

In addition to benefits for people with disabilities living in the community, there are also benefits for their families and society in general. There is evidence of an association between youth moving away from home and parental stress reduction (Kraus, Seltzer, & Jacobson, 2005). From a societal standpoint, it is financially more costly to serve people in institutions (Braddock et al., 2015), and also illegal if the person can be provided services would like to live in the community (ADA, 1990).

1.2 Definition of Terms

Independent living encompasses three discrete concepts: 1) a *residential domain*, which is an objective depiction of living status, 2) *life skills training*, or curriculum intended to increase a student's ability to live independently, and 3) *a civil rights movement*. This study will focus on the first two meanings of the independent living concept, since those can be addressed during the transition to adulthood process that is orchestrated through schools. The services offered through Centers for Independent Living are a variety of discretionary adult services offered outside the educational system, and from a transition planning perspective, schools can only connect students and families to these services, without further control over delivery. To this purpose, this the Chapter II focuses on factors contributing to better independent living outcomes in youth with disabilities and interventions that have shown a promise in teaching independent living skills. However, the next paragraph will include a brief synopsis of the independent living rights

movement, which contributed to the creation of Centers for Independent Living, which provide substantial supports for people with disabilities who decide to live independently.

The Independent Living Movement began in the 1950s and 1960s with the first initiatives to place people with disabilities in the community. Among the first successful experiments with deinstitutionalization were to place a few former patients of New York City's Goldwater Memorial Hospital in the community in the late 1950s (Fleishcher & Zames, 2011). Although achieving some success in integrating in society, former institutional residents also faced discrimination and inaccessible settings, such as postsecondary schools. In fact, this was the environment that sparked the beginnings of Independent Living Movement as a civil rights issue, with people such as Edward Roberts and Lex Friedenat the forefront.

In the realm of the residential domain, there is literature using the terms 'independent living' and 'community living' interchangeably, but the author deems community living to be too general a term to denote having a choice regarding residential placement. Hence, the author will refrain from using 'community living' to mean 'independent living'. The author conceptualizes independent living in terms of informed choice regarding living arrangements, or *residential choice*. It is also worth noting that living independently is a construct specific to European American psychology, where the emphasis is on individual success and achievement (Gilbert, Fiske, & Lindzey, 1998), so it might not be as relevant to all cultures represented in the population of this study.

When considering the context of service delivery and supported choice, we can also refer to independent living as interdependent living, because people with disabilities rely on service providers for support with daily living, while providers have a job because of their clients (White et al., 2010). Regardless of terminology, there is general consensus that students with disabilities

7

require education geared towards skills needed in their postsecondary lives, and that after finishing secondary or postsecondary education might still require adult services supports. For the purposes of aligning with the terminology mostly used in the literature review, this dissertation will use the IL to refer to residential choice, keeping in mind that information in Chapter II is organized in terms of choice-making and factors that promote better informed choices.

Historically, independent living refers to one's ability to choose where to live, whom to live with, and not to rely on others for residential support. Wagner and collaborators (1991) define independent living as living "alone, with a spouse or roommate, in a college dormitory, or in military housing not as a dependent." The same definition was subsequently used by Heal and Rusch (1994), Heal, Rubio, and Rusch (1998), and Bouck (2014).

Independent living is often regarded as more than a living arrangement; it is a philosophy based on self-advocacy and self-determination (National Center on Secondary Education and Transition, 2002). Although living arrangements are a component of the greater quality of life domain (Halpern, 2005), the proposed study will focus on the supports that are needed or perceived as needed to access the desired residential outcomes, which is only one quality of life domain.

1.3 General Postsecondary Outcomes for Students with Disabilities

In light of the large volume of research in general postsecondary outcomes, it is worth describing some of the practices that have been deemed effective for these outcomes. Persons with disabilities generally have much poorer postsecondary outcomes than those without disabilities in terms of education, employment, wages when employed, and independent living (e.g. Newman, Wagner, Cameto, & Knokey, 2009; Golden et al., 2012; Gottlieb, Myhill, &

Blanck, 2013). This disparity is even greater for people with severe disabilities (Flexer et al., 2011; Brault, 2012; USDOL, 2014), and it not only affects those with disabilities, but also imposes financial burdens on society in general (Uvin & Karaaslanli, 2004). To address this disparity, the National Secondary Transition Technical Assistance Center (NSTTAC) identified 17 evidence-based predictors of post-school success in education, employment, and independent living (Test, Fowler, & Kohler, 2013; Mazzotti, Rowe, Cameto, Test, & Morningstar, 2013). Earlier reviews identified the following practices, in order from most-to-least substantiated: paid or unpaid work experience, employment preparation, family involvement, general education inclusion, social skills training, daily living skills training, self-determination skills training, and community or agency collaboration (Landmark, Ju, & Zhang, 2010).

Transition planning is a high-stakes endeavor, with the potential to impact the post-secondary lives of students with IDD on both a professional and personal level (e.g. Kim & Turnbull, 2004; Isaacson, Cocks, Netto, 2014). Now is the time when education should lay a foundation in terms of skills necessary for gaining employment, living independently, and being involved in the community (e.g. Papay & Bambara, 2013).

Transition to adulthood is a complex process, when youth and their families need a variety of supports and services to first plan and then achieve their goals towards desirable outcomes. Traditionally, the aim of transition is to prepare a young person for either employment or college, but often the expected outcomes cover a broader range of activities, from independent living to personal relationships (Henninger & Taylor, 2014). Research indicates that generally, individuals with disabilities are less successful in reaching those goals (Newman, Wagner, Cameto, & Knokey, 2009; Golden et al., 2012; Gottlieb, Myhill, & Blanck, 2013). This holds true especially for those with more severe disabilities, including IDD (Brault, 2012).

1.4 Independent Living as a Means of Asserting Choice

Asserting choice in regards to living arrangements is both a matter of human rights as well as a strong impact factor for the quality of life (Miller et al., 2008). Research indicates that all people, regardless of disability status face constraints in their choice of living arrangements, such as finances or availability of transportation. To that extent, Sheppard-Jones and collaborators (2005) found that among general members of society, 64% chose where to live and 85% chose whom to live with. Comparatively, Lakin and collaborators (2008) found that among people with Intellectual Disability (ID), 14% chose where to live and 26% chose whom to live with. Similarly, Stancliffe et al. (2011) found that those participants who were able to answer the survey were involved in making a choice in where to live in 61.3% of cases and with whom to live with in 49.7%, while those who used a proxy were only involved in 24.7% in making the choice of where to live and 29.5% of whom to live with. This latter study paints of dire picture in terms of the rate of residential choice among people with ID. Interestingly, neither gender nor age were significant predictors for making more choices; the only significant predictor was level of ID. The more severe the ID, the less choice people had both in terms of where and with whom to live (Stancliffe et al., 2011).

Ticha and collaborators (2012) also investigated the everyday choices of people with ID. Unsurprisingly, they found that those living in independent settings (on their own, with host families, or in small group homes) were able to make more choices than counterparts living in institutions. The level of ID was another significant factor, with the milder disability group having more everyday choices. The State in which the person lived was an additional significant factor (Ticha et al., 2012). Overall, people with disabilities living on their own, in small

residential settings, or with a host family have more choices than those in larger settings (Nord et al., 2014).

1.5 Theoretical Framework

The theories specific to IL are driven by evidence, most of them falling under the behavioral paradigm. It is generally accepted that certain practices are conducive to better IL/functional skills acquisition, although some of these practices do not have a solid evidence base. For example, community based instruction is a recommended practice (Zionich, 2011), although its efficacy has not been substantiated with research evidence (Test et al., 2009).

Although the theory is not specified, several review papers address the predictors for postsecondary success. In terms of independent living, Mazzotti et al. (2015) found the following predictors as being substantiated with studies: feeding and dressing independently, transportation, independent travel skills, receiving life skills or social skills instruction, and the students performing various domestic chores. Test et al. (2009) also identified a series of predictors for independent living: a student's school program (integration), individual aptitude, paid work, assistance from community-based agencies, family and friend support, high scores on adaptive and academic skills, self-care skills, GPA on academic activities, receiving a diploma, daily living skills, personal/social skills, and occupational guidance and preparation.

1.6 Methodology

To investigate the extent to which individual, family, and school factors predict postsecondary living status for students with IDD this study used a logistic regression model for understanding the associations of different factors and postsecondary living status by using nationally representative data from the National Longitudinal Transition Study 2 (NLTS2).

The *predictors* that used in this model were: individual characteristics (ethnicity, gender,

11

disability label, age, family's income level above poverty), skills (functional mental skills, social skills, household skills, self-care skills, personal autonomy, self realization, and psychological empowerment), family (parental involvement, parental expectations, community participation), and school (having IL as a primary IEP goal, amount of progress in IL goal, inclusion in general education, participating in a school-sponsored work activity, and student's role in transition planning) factors.

The *outcome* variable was based on a single item in the Wave 5 Parent/youth survey asking where the youth currently lives. Similarly to Bouck (2014), computed a dichotomous variable was computed, which combined all the living status items in two categories. Youth were considered to live independently if they lived on their own, with a spouse or roommate, in college or military dormitories, or on the job. They were considered not to live independently if they lived with a family member, foster parent/guardian, in an institution, or residential home.

The *moderators* used were factors that were identified as significant predictors in the initial model.

The analysis consisted of secondary data analysis using complex sampling and weighting procedures recommended by the Institute of Education Studies (IES). In order to investigate the main effects of individual, family, and school factors, logistic regression was used, including interactions for estimating the moderating effect.

Chapter II

Review of Literature

2.1 Conceptual Framework

There are several theories that are applicable to the transition to adulthood, especially when the focus is on residential choice outcomes. From a person-centered perspective, the notion of choice becomes paramount and the self-determination theory as developed by Deci and Ryan (2012) provides a framework for understanding the development of intrinsic motivation as a result of an autonomy-supporting environment relative to a controlling one. The notion that the environment "selects" part of the learned behavior is not new, and was introduced much earlier by Skinner (1930) and then developed into the behaviorist notion of operant learning, where people learned from their interactions with the environment to develop adaptive behaviors (Cooper, Heron, & Heward, 2007). However, self-determination adds an explanation of how the learning resulting from the interaction with the environment takes place. Self-determination theory emphasizes that all people have three basic needs (i.e. autonomy, competence, and relatedness) that act as mediators of the effects of context on psychological well-being (Deci & Ryan, 2012). In other words, humans have an innate need to engage with others and express themselves (Deci & Ryan, 1994, 2002).

Intrinsic motivation provides an explanation for how people make choices at the individual level. However, that is not the only level people function in. Halpern (1993) recommends integrating the individual perspective with social norms in order to derive a comprehensive understanding of quality-of-life values and domains. When we consider the

persons from various disciplines that have to work collaboratively to ensure positive transition outcomes, and the impact of other societal forces on these outcomes, we can group these forces in several systems, such as developmental, family, and service providers (Morgan, 1988). Bronfebrenner (1979, 2005) offers a framework of how these systems interact at different levels. Sameroff and MacKenzie (2003) also introduce the notion that interactions between individuals are dynamic, and have the role to shape and change each other. The same can be extended to include systems, and their interaction across all the levels identified by Bronfebrenner.

In what follows, the author will relate her understanding/interpretation of the role of theories applicable to the transition process within Bronfebrenner's (1979, 2005) ecological perspective. The microsystem contains daily interactions students with disabilities have with parents, friends, and service providers. These are face-to-face interactions that shape the worldview of all the members of these categories or systems. From a behavioral standpoint, all people react to the environment and learn from their experiences. But they not only react to the environment, but also each other, and that also shapes their behaviors and beliefs, according to Sameroff and MacKenzie's (2003) transactional theory. Van Lange and Rusbult (2012) take this notion a step further and assert that all those involved are interdependent in the sense that social situations can be reduced to a taxonomy, and by interacting people form patterns of interaction specific for certain relationships based on personal experience, mutual responses, orientation, and cultural norms.

The next levels, the mesosytem and exosystem refer to the interaction between systems either directly containing the person with disabilities (e.g. neighborhood, community, service providing agencies) or having an impact on their lives (e.g. parents' workplace). Hodgson and Spours (2015) add another layer to this setting, an exo-2, which entails the regional economic

14

landscape, in addition to agencies and networks. This level accounts for expanded patterns in transportation for employment or training (Hodgeson & Spours, 2015). At this level the focus is on systems dynamics and collaboration. These intermediary levels have a mediating role of macro influences on the person with disabilities and provide the "opportunity landscape" (Hodgeson & Spours, 2015).

The outer most level, the macrosystem, contains the cultural norms and patterns, society, and socio-geo-political influences (i.e. national and international legislation/policy trends). The relationships here are focused on the impact of norms and policies on individual systems. For students with disabilities transitioning to adulthood from the perspective of residential choice, the most influential policies are the IDEA and Section 504 before finishing school, the Olmstead and state Medicaid funding after finishing, and the ADA and Convention on the People with Disabilities throughout their lifespan. In addition to these, varying levels of cultural norms would also play an important role.

The final level of analysis outlined by Bronfebrenner (1979) is the chronosystem, which follows the individual and adjacent systems over time to assess change. Time has a direct effect on policies regarding supports and service delivery as legislations and regulations are proposed, reviewed, and reauthorized but also on cultural norms and expectations. An example of the change over time in cultural norms is the view on the beginning of adulthood, which shifted considerably over the past few decades (Brynner, 2005).

From a policy perspective, Shogren et al. (2009) conceptualize a framework that guides policy-making by describing inputs and outcomes at all the interaction levels outlined by Bronfebrenner (1979). The contributing impactful factors, conceptualized as "inputs" are: social factors, core concepts of disability, and changing conception of disability. These factors

contribute to changes in practice and policy, with outcomes spanning over the entire array of human functioning: personal, family, societal, and systems change (Shogren et al., 2009).

When referring to "core concepts of disability" that have an influence on all levels of Bronfebrenner's (1979) framework, we have to consider the various perspectives on disability. The most widespread model is a medical one, where those with a disability are compared to those without (Baglieri, Valle, Connor, & Gallagher, 2010), but there is another perspective that disability is a contrived notion, with everyone falling on a continuum from more to less disabled (Hoskins, 2008). This alternative perspective on disability was introduces by the field of Disabilities Studies more than 30 years ago (Baglieri et al., 2008), and has more recently contributed to the development of a new perspective, Critical Disability Theory (Hoskins, 2008). This perspective is important for all levels of systems interactions, because it emphasizes the benefits of a universal approach to instruction and policy, where decisions made to support those that place lower on the spectrum would benefit everyone.

2.2 Literature Selection

The literature review was performed by examining extant literature to answer the following questions:

1. What is the prevalence of independent living in the US?

2. Which factors contribute to better IL outcomes?

The literature search was performed in ERIC ProQuest, and Academic Search Complete (EBSCO), two major sources of materials for Education. The search included the span of years between 2004 (the latest authorization of IDEA) and 2016.

Literature review terms included ("independent living" OR "residential independence" OR "community living") AND (disab* OR "mental retardation" OR "special education" OR

"special needs"). These terms yielded 1584 results in ERIC, out of which 598 were peer-reviewed articles, 28 books, and 24 dissertations and theses. The rest of items, 933 in total, which included reports and encyclopedia entries were excluded. The same terms identified 2421 results in Academic Search Complete, out of which 2159 were peer-reviewed and browsed for this review. Archival searches were also conducted for relevant articles. Items were included if they were original research from published articles or dissertations/theses. Reviews and historic/opinion pieces informed this review in establishing the background or historical context, but were not included.

Articles were included if that investigated independent living, adaptive, or functional skills for youth. Papers addressing the needs of aging adults with disabilities (over 65 years old) were excluded, since this review focused on educational transition to adulthood. Included articles also had to address either a contextual element that was associated to IL, or a direct intervention that proved promising for enhancing these skills or addressed adult service for transitioning youth. Manuscripts without an English translation were also excluded. This review included five articles for prevalence, 26 identifying contextual factors for IL, and 34 more papers describing the result of interventions for living skills. One of those 24 papers was a dissertation, the others peer-reviewed articles. The final count for reviewed articles is 63 independent papers. This number reflects that two articles were omitted from the final count because they overlapped between categories.

2.3 Prevalence of Independent Living in the U.S.

The prevalence of independent living is difficult to assess, with no tool to this date that collects or compiles this information. The best proxies for a national prevalence are large studies that use a sufficient sample to make estimates for the entire population. The National

Longitudinal Transition Study (NLTS) was the first national study to collect data on residential circumstances of youth with disabilities, who were tracked longitudinally from the late 1980s through the early 1990s. A follow-up study, the National Transition Longitudinal Study 2 (NLTS2) was meant to sample a new generation of special education services recipients. Results across the two studies reveal no significant differences in prevalence across the two studies, for youth followed up to 4 years postsecondary, according to Newman and collaborators (2010), who compared the 1990 and 2005 cohorts. The rates for independent living (on their own, with a spouse, partner, or roommate) were 24.4% and 22.7%, respectively, and the rates for semi-independent living (in a college dormitory, military housing, or group homes) were 4.8% and 7%, respectively (Newman et al., 2010). For the NLTS2 sample alone, Newman and collaborators (2011) found that for students who had been out of school for up to eight years 59% had at some point lived independently, and 4% semi-independently (primarily college dormitory or military housing).

Although few, there are other studies that assessed prevalence using a large database. Stainton and collaborators (2011) found that 11.5% of people with ID lived independently, in a rented or owned house, while 57.3% lived at home with family members. This study also found an association between age and living setting, with more people than expected under the age of 50 living at home with their family, and more people over 50 than expected living in group homes (Stainton et al., 2011). Gardner and Carran (2005) also used a nationally representative database and found that among adults (19-65 years old) who provided data during 1993 and 2002, 7.6% lived independently, 16% with their natural or foster family, and 58% in supervised living situations (Gardner & Carran, 2005).

2.4 Factors that contribute to better IL outcomes

There are two parameters that contribute to a student's education: the setting where instruction takes place, or *context*, and the content being taught, or *curriculum* (Jackson, Ryndak, & Wehmeyer, 2010). These two parameters, with their application to IL, provided the organizational framework for this review.

2.4.1 Contextual Factors

Flexer and collaborators (2011) suggest that the concept of evidence-based practices in the transition to adulthood should be reconceptualized as practices that work for certain types of students with certain types of goals.

Individual Characteristics

Although we know that people with disabilities have lower odds of living independently, this group is highly heterogeneous in terms of needs and outcomes, with variations across personal characteristics and contextual factors. Therefore, it is important to understand the differences in support needs across different groups in order to be able to design an IL intervention.

Williams-Diehm and Benz (2008) found that **ethnicity** is a significant predictor for IL, with Anglo students achieving better outcomes than African Americans and Hispanics, with 15.4% Anglo students living independently, compared to 8.1% African American and 7.3% Hispanic. The authors attribute the latter finding to possible cultural expectations in the case of Hispanic students (Williams-Diehm & Benz, 2008). It is important to note that these differences reflect the aggregate results of students with and without disabilities that were included in the sample, and less than half of the sample were students with disabilities. However, other studies found differences between ethnic groups as well. Newman and collaborators (2011) used the

National Longitudinal Transition Study 2 (NLTS2) and note that of the students who lived independently eight years after finishing high school 64.2% were White, 47.4% African American, and 51.2% Hispanic.

There is also evidence that depending on the **disability label**, people fare differently in terms of how likely they are to live independently and how intensive supports they require. In a small study of graduates from an inclusionary vocational and technology high school, Luftig and Muthert (2005) found that within five years of finishing school, 95% of people with ID still lived with their parents, compared to 53% of those with a Learning Disability (LD).

Another study that investigated differences in independent living outcomes between groups with different disability labels is Esbensen et al. (2010). The authors compared adults with ASD and Down Syndrome (DS) on various quality of life indicators, including residential independence, and also researched the predictors for independence for both populations. They found that people with ASD had less residential independence and social contact with friends, more limited functional skills, more problem behaviors, and more unmet service needs than those with DS. The common predictor for independence in both populations was having better functional abilities. For the ASD population, another significant predictor was not receiving, and most likely not needing, psychological services, while for the DS population receiving particular services (speech/language, recreational services, and transportation) was a significant factor (Esbensen et al., 2010). Hendricks and Wehman (2009) also emphasize that people with ASD might need a wider range of supports to live independently than other categories of disabilities and a secondary education geared towards life rather than learning skills. In fact, there is ample research suggesting that people with ASD have the lowest IL outcomes (Wagner et al, 2005; Wehman et al., 2014).

Sanford and collaborators (2011) also examined differences between groups with different disability labels and found that most disability groups (i.e. learning, emotional, visual, and hearing disabilities and other health impairment) were more likely to live independently than those with multiple disabilities. Another important finding in this study was that high school leaving status was not a significant predictor for residential independence (Sanford et al, 2011).

Newman and collaborators (2011) also compared how people with different disability labels fared off in terms of independent living and concurred with Sanford et al. that people with learning disabilities were the most likely to live independently (65%), followed, by those with emotional disturbances (63%), other health impairment (58%), visual impairments (55%), and speech/language and hearing impairment (51%). Those with autism (17%) and multiple disabilities (16.4%) were the least likely to live independently.

The **severity of disability** might interact with gender in certain disabilities. For example, in a study compared independent living skills in youth (15-25 years old) with Fragile X Syndrome (FXS) and controls with Developmental Disabilities (DD) matched on IQ found that there were no differences overall between the two groups. The study also found a difference in performance between males and females with FXS, with females outperforming males. The authors found an association between autistic symptomatology and independent living skills in the FXS population, when controlling for IQ, but not for the control group (Hustyi et al., 2015).

In terms of improvement of independent living rates with **age**, Sanford and collaborators (2011) found that across disability categories, those who had been out of high school between 4 and 6 years (47 percent) were more likely to live independently than those who had been out of high school for less than 2 years (21 percent). Newman and collaborators (2011) also found that the longer students have been out of high school, the more likely they were to live independently,

with 38.9% of those out of high school for under 3 years, 47.8 % of those out of high school for 3-5 years, and 70.5% of those out of high school 5-8 years living independently. However, this trend of increasing numbers of youth living independently with time since finishing school does not apply equally to all disability categories. Bouck (2014) investigated the stability of independent living for students with mild ID using the same dataset and found no improvement in rates from the time when a student finishes school until 8 years after.

Interestingly, the **family's income level** is not a predictor for postsecondary IL status (Newman et al., 2011). If this finding is accurate, it is counterintuitive since the income level should account for at least as great variability as ethnicity, and more research should investigate why this difference is not found. However, it might also be an artifact associated with the way income levels are categorized, with studies typically splitting income in three groups: 1) up to $25,000, 2) between $25,000, and c) above $50,000 (see NLTS2 reports).

Functional and Adaptive Skill Level

In addition to demographic characteristics, adaptive behaviors are also considered essential in the attainment of independent living status. In a study on the relationship between adaptive behaviors and community independence, Woolf, Woolf, and Oakland (2010) found that the current adaptive behavior accounted for 40%-43% of variance in residential independence. This study may suggest a connection between skills that can be taught in school (i.e. adaptive) and postsecondary outcomes.

Although seemingly offering a good measure of everyday functioning, adaptive skills are not always regarded as dynamic, and thus able to be modified. For example, in an attempt to identify the intellectual components that were most salient to everyday functioning, Su, Chen, Wuang, Lin, and Wu (2008) defined everyday functioning in terms of indicators such as

services, functional signs, and health and safety. The factor identified as having the greatest contribution to everyday competence was verbal memory/comprehension, as a generalized factor of learning potential (Su et al., 2008). Despite their seemingly intuitive finding, the authors offer no means of modifying this factor, therefore not offering a way to intervene in increasing this skill. Both verbal memory and comprehension are malleable skills that can be addressed in school instruction.

Another measure of adaptive functioning is social problem-solving. Gumpel, Tappe, and Araki (2000) compared the problem-solving abilities of adults with Developmental Disabilities (DD) with those without disabilities and found differences between what each group considered to be difficult. They constructed an instrument that presented 15 short scenarios for vocational, independent living, and community social skills. The DD group had *more sophisticated* responses than the non-DD group when asked how they would react when: 1) they have to ask their parents for money and 2) a salesperson was rude to them, and *less sophisticated* when 3) someone in their home said something rude to them, 4) they wanted to meet a stranger at a party, 5) a co-worker they like talked too much on the job and slowed them down, 6) their boss yelled at them for doing something wrong, and 7) their boss wrongfully accuses them of always arriving late (Gumpel Tappe, & Araki, 2000). Although this study has presentation issues that cast doubt on the validity of findings, there seem to be differences between the two groups in terms of their problem-solving skills that prompt the need for further investigation.

Rather than comparing the adaptive functioning related to performing independent living tasks of people with and without disabilities, another category of studies focuses on differences between various disabilities. For example, Matson, Dempsey, and Fodstat (2009) investigated differences between the performance of independent living tasks of adults with ASD, Pervasive

Developmental Disorder Not Otherwise Specified (PDD-NOS) and ID. Although the diagnostic criteria are no longer current, their findings of differences between the functioning of adults with ASD and PDD-NOS from those with ID are still relevant. The team found that in the dressing domain, the ASD and PDD-NOS groups functioned on a lower level than the ID group. In the grooming domain, the ASD group performed the poorest, followed by the PDD-NOS group, with both groups performing lower than the ID group. In terms of hygiene, both the ASD and PDD-NOS groups performed poorer than the ID group (Matson, Dempsey, & Fostat, 2009).

Although a different category of adaptive skills, social skills might also play a role in learning and school participation. In a study performed on a national sample (NLTS2), Milsom and Glanville (2009) found that self-control and cooperation were predictors of higher grades, less trouble with teachers, and greater school enjoyment for students with learning disabilities and emotional disturbance. Although this finding is not directly related to IL, it is important to consider these factors when building an instructional model for transition that includes training for IL skills.

The aforementioned research focused on objective measures of skills needed for successful IL. Other research focused on what is perceived as important for students to know. In a study of consensus-making regarding skills regarded as essential for postsecondary life in various domains, Dowrick (2004) found that teams of teachers, students, and community representatives chose the following skills as priorities for independent living: (a) knowing how to safely prepare food, (b) being able to maintain personal hygiene, and (c) choosing recreation/leisure activities in the community.

Student Leadership in Transition Planning

Legally, students are required to attend IEP transition planning meetings. It is presumed that by achieving higher levels of engagement in the transition process and assessment, students would achieve better postsecondary outcomes (Rusch et al., 2009; Etscheidt, 2006; Halpern, 2004; also see Ianacome & Kochhar, 1996; Field, 1996).

Self-determination

Self-determination is deemed to be the means through which students can learn to become engaged in decisions about their lives (Ryan & Deci, 2000). Wehmeyer and Palmer (2003) identified substantial differences between the low and high self-determination groups' performance on multiple postsecondary life categories, including financial independence and independent living. These findings were similar at one and three-year follow-ups. Specifically for independent living, students in the high self-determination group had significantly higher rates of independent living three years after finishing high school than those in the low self-determination group, but not after one year alone (Wehmeyer & Palmer, 2003).

In a more recent study, Shogren and collaborators (2015) investigated the effect of self-determination interventions and found no significant effect on independent living. However, they followed students only up to two years after the interventions, which could account for the lack of effect, and the authors suggest that independent living might not be relevant for students until they have been out of school for one year or more. This finding is supported by other studies based on the NLTS2 (Wagner, Newman, Cameto, Garza, & Levine, 2005), although Newman et al. (2011) suggests this phenomenon might decrease over time. This theory is very relevant for the study of IL in general, not just in relation to self-determination.

Expectations, Perceptions, and Culture

There is significant literature indicating that parental expectations are predictive of better postsecondary outcomes such as employment or education (Chiang et al., 2012; Doren, Gau, & Lindstrom, 2012; Papay & Bambara, 2014; Wagner et al., 2014). Although this association has not been tested for IL, there is enough reason to believe that parental/familial expectations might be significant in this case as well and the relationship should be investigated.

Culture might play a significant role in what parents expect their children to do, and for what the youth themselves are encultured to aspire to. In cultures such as African American or Latino, youth are more likely to live in extended family households, where family members contribute to others' physical and economic well-being (Harry, Kligner, & Hart, 2005; Kalyanpur & Harry, 2004).

There is some support for parental expectations following this trend. For example, Zhang and collaborators (2010) found that some Hispanic families expected their child with a disability to continue living in the household, while European American families were more likely to plan for IL.

Student expectations, however, might differ from what familial and cultural norms. In a study of urban youth post-school aspiration, Scanlon et al. (2008) found that most youth with Learning Disabilities (LD) from diverse cultures expect to live with spouses or friends once they finish school, with few exceptions. Among those few exceptions, most students foresee living with their families because it is their choice, not because they are expected to (Scanlon et al., 2008).

After students graduate, research indicated that community and familial support is essential in helping people with disabilities participate in their community. The community support can come in the form of friends, social support at school or work, and from religious organizations (Irvine & Lupart, 2006). Social networks or "benefactors" are essential for community living and work contexts by providing models of appropriate behavior, amongst other supports (Ryndak, Ward, Alper, Montgomery, & Storch, 2010).

Health and Nutrition

Making informed choices regarding health and nutrition is a foundational skill for living independently. Joblin & Cuskelly (2006) surveyed 38 families including parents and youth with Down Syndrome (DS) regarding general hygiene, substance use, exercise, and eating habits. They found that there was a discrepancy between what the young people were reporting and their family's report, with the youth reporting higher rates of independent engagement in hygiene practices. Except for bathing and cleaning teeth, youth with DS had relatively low rates of engaging in other hygiene practices, knowing the health risks associated with substance abuse, or making choices about healthy physical activity or meals (Joblin & Cuskelly, 2006).

2.4.2 Curriculum and Services

There is currently a national debate whether students with moderate or severe ID should participate in an academic or functional curriculum (Ayres, Alisa Lowrey, Douglas, & Sievers, 2011 & 2012). In a secondary analysis on the NLTS-2, Bouck (2012) found that for students with ID there were no statistically significant differences in postschool outcomes in terms of independent living, post-secondary attendance, and wages between those who were educated using an academic compared to a functional curriculum. Moreover, the type of curriculum was not a predictor for any of the aforementioned outcomes (Bouck, 2012). This comes as no

surprise, considering that in an earlier article on the topic of curriculum, Bouck and Flanagan (2010) concluded, as a result of a systematic review of the literature, that a functional curriculum for secondary students is not an evidence-based practice.

Within the past decade a promising approach started getting more traction in education and special education – using the Universal Design for Learning (UDL) to address the needs of students with disabilities. CAST (2015) defined UDL as "a framework to improve and optimize teaching and learning for all people." This approach is not specifically designed for students with disabilities, but for any learner, which is an advantage when proposing an approach for a highly heterogeneous population such as students with disabilities. There is fledgling evidence of the effectiveness of using this framework for students with disabilities (e.g. Dolan, Hall, Banerjee, Chun, & Stragerman, 2005; Vue, 2015), but UDL cannot yet be considered an evidence-based practice.

Although we do not yet have sufficient evidence make a determination whether functional or academic practices should become evidence-based practices in the case of students with moderate and severe disabilities, there are other considerations regarding effective practices that should be taken into account. For example, Certo et al. (2009) suggest that improving the eligibility and reception of postsecondary services and streamlining the transition between school and adult services would improve the outcomes. The authors propose a system change based on the Transition Services Integration Model (TSIM; Certo et al., 2003), which yielded superior outcomes for adults with severe ID (Certo et al., 2003).

Regardless of the curriculum taught, there is a body of literature suggesting that participation in inclusive education can increase the skills needed for IL and allow for maximizing the benefits of a support network and naturally-occurring activities in the

community (Sun, 2007; Ryndak, Ward, Alper, Montgomery, & Storch, 2010). Moreover, it is not just inclusion, but also the quality of instruction and supports that has a direct impact on postsecondary outcomes (Sun, 2007).

Although this is true for general postsecondary outcomes, there were no studies published in the targeted time period addressing IL specifically. Therefore, I delved deeper into the earlier literature by a decade and found a few studies from the 1990s suggesting that inclusion leads to better IL outcomes. Heal and Rusch (1994) found that high scores on adaptive and academic skills, self-help skills, GPA on academic activities, having received a diploma, and higher IQ all predict IL. Later on, Heal, Khoju, and Rusch (1997) found that integration and percentage of hours spent in general education are statistically significant as predictors for IL, with a moderate size effect.

Direct Interventions

Over the past four decades considerable attention was geared towards developing effective instructional strategies for teaching students with IDD the skills required for daily living, such as using transportation, food preparation, or hygiene (Westling, Fox, & Carter, 2014). Life skills are considered essential in achieving independence and have been defined as "those skills or tasks that contribute to the successful, independent functioning of an individual in adulthood" (Cronin, 1996, p. 54) and are an evidence-based practice with a moderate level of evidence for independent living (Test et al., 2009; Mazzotti et al., 2015; Haber et al., 2015). These skills can be grouped into five domains: self-care and domestic living, recreation and leisure, communication and social skills, vocational skills, and other skills needed for community participation (Alwell & Cobb, 2009). Similarly to Alwell and Cobb (2009), this review will focus on studies that report the implementation and effects of three of these clusters that are

29

directly related to living independently in the community: i) recreation and/or leisure, ii) maintaining a home/personal care, and iii) participation in the community, keeping into consideration that a purely functional curriculum has not emerged as an evidence-based practice for students with IDD (Bouck & Flanagan, 2010). Since the scope of this review is not to provide a comprehensive review of life skills, the author will select a few examples for each domain and proposed intervention.

Historically, life skills (for alternative concepts see Cronin, 1996) were taught in a natural setting (Cippani, 1988). However, logistic issues that are associated with in-vivo instruction raise a number of financial, safety (e.g. Ramdos et al, 2013), or organizational (i.e. transportation, scheduling, frequency) considerations that might make it unfeasible. As a result, researchers have been investigating alternative ways to providing instruction directly in the community by using technology. Below are the interventions categorized according to the setting they are delivered: those that use technology to simulate real-life conditions in a segregated setting, and those performed directly in the community. All the articles included in this section describe direct interventions, delivered through intensive learning sessions where a skill is taught over a limited period of time until it is mastered.

In addition to those two categories, technology can be used for access and communication, for either assistive or adaptive purposes. This technology can be used to facilitate communication, which is sometimes essential for a person with disabilities to fully participate in societal life, and live an independent life (Isakson, Burghstahler, & Arnold, 2006). In addition to help with communication, technology can be used specifically for independent living tasks, such as eating devices, switches to operate other devices, cell phones with preprogrammed numbers, environmental controls, alarm buttons, and various remotes, to name a

few of the functions technology can fulfill (Palmer, Wehmeyer, Davies, & Stock, 2012).

However, despite its potential benefits, many of those who could use technology run into barriers

related to cost and not knowing what is available or appropriate (Palmer et al., 2012).

Instruction in Simulated Environments

Video Based Instruction (VBI) has been deemed to be an effective way of teaching self-

care or independent living skills to people with developmental disabilities for the past three

decades (Alberto, Cihak, & Gama, 2004). The most widely used visual strategies are video

modeling and video prompting (Banda, Dogoe, & Matuszny, 2011).

In *video modeling* the learner watches a video of the steps required to doing a task and

then moves on to performing the task himself (Cannella-Malone et al., 2006). Video modeling

paired with other strategies (i.e. static picture prompts or least-to-most prompting) proved to be

effective in teaching students with IDD banking and purchasing skills (Alberto, Cihak, & Gama,

2004), and domestic skills (Murzynski & Bourett 2007). However, when comparing video

modeling to video prompting, Cannella-Malone and collaborators (2006) found video prompting

to be vastly more effective than video modeling in learning how to put away groceries and set a

table.

In *video prompting* the learner views a sequential series of videos displaying the steps

necessary to completing a task and performs each sequence before advancing to the next

(Sigafoos et al., 2007). This strategy proved effective in teaching a variety of life skills needed

for IL across a variety of studies. Generally, studies can be categorized into those teaching

cooking (Graves et al., 2005; Mechling et al., 2008, 2009; Mechling & Gustavson, 2008, 2009;

Mechling & Stephen, 2009; Sigafoos et al., 2005), laundry skills (Horn et al., 2008), banking

skills (Cihak et al., 2006), and domestic chores (Cannela-Malone et al., 2006; Sigafoos et al., 2007).

Computer-based intervention (CBI) is a more sophisticated method of delivering instruction, which entails students watching videos while interacting with the material using a variety of hardware adapted to their skills level. This interaction allows for additional components to be embedded in the interventions, such as specific reinforcement contingencies, corrective feedback, and tailored prompting hierarchies (Ramdos et al., 2012). Specific skills CBI has been successfully employed in teaching are using AT for communication in the community (Mechling & Cronin, 2006), cooking (Mechling et al, 2013; Mechling, Gast, & Seid, 2010), transportation (Mechling & O'Brien, 2010), grocery shopping (Hansen & Morgan, 2008; Hutcherson et al, 2004; Ayres et al, 2006), banking (Davies, Stock, & Wehmeyer, 2003), and meal preparation tasks (Ayres et al., 2009; Ayres and Cihak 2010).

Given the development of new technology and hardware adapted for individual needs, this approach seems preferable to video modeling and prompting, which although promising in terms of results, do not allow any sense of control to the learner. Given that success in IL is associated with making choices and understanding options, a more interactive means of learning might provide a wider array of opportunities to practice choice-making skills in addition to daily living skills instruction. In this sense, a notable application of CBI is to increase a student's knowledge about postsecondary options in postsecondary education, employment, and independent living. Mazzotti and collaborators (2010) utilized a computer-delivered PowerPoint presentation to help participants acquire knowledge regarding postsecondary options. The intervention was successful for all participants (Mazzotti et al., 2010).

A category within the CBI strand is using simulations as an alterative to community based instruction that offers more control of external factors, reduces the burden of scheduling, transportation, and cost, and offers ample opportunities for practice (Zionich, 2011). Simulations were found to be effective in using an ATM (Davies, Stock, & Wehmeyer, 2003) and selecting items at the grocery store (Hutcherson et al., 2004). This alternative might offer an even more flexible means of engagement and participation than basic CBI, but is also more expensive to develop or purchase if a commercially based intervention is used.

An obvious limitation in all the aforementioned research is the use of single-case design, which does not help explain how participants are learning. Moreover, all interventions are delivered in an individual setting, which might prove to be unfeasible in a school environment. In terms of paradigm, all interventions are driven by the behaviorism paradigm, which limits the scope of understanding phenomena from a multilateral perspective.

Learning in the Community

Providing instruction and practice opportunities in the community is the most naturalistic approach, but as mentioned earlier there are constraints in terms of scheduling, transportation, and overall costs. A way of addressing some of these constrains is to train parents to deliver instruction directly in the community. In a study aiming to teach youth to make purchases at the end of the intervention students made gains, and both youth and their parents maintained their skills during a posttest (DiPipi-Hoy & Kitendra, 2004). Although a small study, this opens the discussion to the possibility of effectively using parents to extend IL instruction in the community, which brings the same benefits as simulations, along with the opportunity to get real-life practice with targeted skills.

Other direct intervention strategies are behaviorally-based and rely on prompting and task analysis to teach diverse independent living skills. Dollar, Frederick, Alberto, and Luke (2012) succeeded in using simultaneous prompting to teach two persons with severe intellectual disabilities how to operate electronic devices and fold clothes, with the treatment maintaining after mastery. Other skills that show evidence of improvement with community-based programs are grocery shopping (Gumpel & Nativ-Ari-Am, 2001), general IL skills (Luftig & Muthert, 2005; Roberts, 2013), and self-regulation and goal achievement (Powers et al., 2012).

There seems to be an increase in the prevalence of independent living for those who participated in a postsecondary program. In a study that followed graduates of the Taft College Transition to Independent Living program, Ross and collaborators (2013) found that 96% of participants lived independently, and 90% reported receiving independent living services at the time of the interview. Another program follow-up indicated mixed results: most youth still lived with their families (61%), but they felt more empowered by participating in the program (Kingsworth et al, 2014). An obvious limitation of these programs is that students who enroll already possess skills that allow them to pursue postsecondary education and are motivated enough to gain acceptance to relatively small and possibly competitive programs. Despite this limitation, it is possible that some programs are more effective in promoting the development of life skills and as Flexer et al (2011) mentioned, practices need to be geared towards specific populations. More research is needed to investigate the elements that are effective in postsecondary independent living programs, and differentiate between the impact of individual characteristics (i.e. severity of disability, motivation, family or services support), and program components.

It appears that when targeting discrete IL or daily living skills researchers are successful at demonstrating a change in acquisition; however, when approached globally, youth still fall behind in achieving IL, with slight differences between various approaches in community learning. For VBI or CBI no studies follow participants to see if they are able to live independently as an effect of an intervention, which is consistent with the behaviorism paradigm that focuses on discrete skills, taught one at a time.

2.5 Literature Review Implications

This review identified a series of factors and interventions that prepare students for postsecondary life and lead to better postsecondary outcomes. Contextual factors refer to both the environment and personal characteristics, as conceptualized by Shogren, Luckasson and Shalock (2014) for the field of ID. Significant contextual factors that are associated with postsecondary outcomes in terms of IL are ethnicity, gender, having a specific disability label, severity of disability, and age. However, specific factors for different disabilities groups are not known. For example, some research suggests that the longer the time since former special education service recipients, the better the IL outcomes (Newman et al., 2011; Stanford et al., 2011). However, when applied to those with mild ID, time does not seem to make a difference (Bouck, 2014). This raises the question of whether age, or the time since finishing high school is a significant factor for others disabilities. This study proposes to answer the question whether time is a significant factors specifically for postsecondary living status.

Another question is whether IL is a stable outcome. Once a person acquires it, how likely are they to become dependent again? This is an important issue when measuring IL as a postsecondary outcome and has implications for the results of studies investigating interventions for IL skills.

There are other individual characteristics that come in a range, such as severity of disability and functional/adaptive skills. For these factors, only lower levels of skill predict lower IL attainment, so this must be considered when thinking about dosage of support needed for each student. This study proposes to investigate whether severity of disability or adaptive skills are predictors for postsecondary living status.

In addition to demographic factors, there are also modifiable individual characteristics that have the potential to increase IL outcomes, such as leadership and self-determination. However, these predictors have not been assessed in connection to postsecondary living status, and this study, and this study proses to explore any association.

Having healthy habits in terms of hygiene and nutrition has also been associated with better IL outcome. Culture can be regarded as a factor both internal and external to the person with disabilities; in terms of internal influences, enculturation can impact a person's own expectations and goals for IL, but there are also external factors (i.e. parental expectations, cultural norms) that are highly influential for IL outcomes. This study will investigate any connection between parental factors (involvement and expectations) and postsecondary living status.

When thinking about using these factors to provide services, demographic characteristics are immutable, but knowing which ones influence IL outcomes, we can tailor the types and amounts of support provided. For example, we know that ethnicity is a significant factor, so we can offer more intensive supports to students who are ethnically diverse to balance out the effect of ethnicity. We can also offer students with moderate to severe ID and ASD more supports, since we know what disabilities tend to fare worst. This study will explore whether ethnicity and disability label are good predictors for postsecondary living status.

The level of functional skills, leadership, and self-determination are all malleable factors, so we can design interventions to address these specifically. Expectations, both the students' and the parents' can be addressed through trainings that teach participants to look beyond stereotypes and focus on specific student strengths and wishes.

All the interventions reviewed targeted living skills and mostly employed behavioral techniques to teach these skills. However, a comprehensive program for teaching skills required for IL should span across a variety of skill domains, including functional and adaptive, daily living, and self-determination skills, in addition to offering knowledge regarding options and connecting the family to essential resources in the community.

The findings of this review provide some evidence for what should be included in a comprehensive intervention for IL, but not enough is known regarding the *factors that are good predictors specifically for IL* and the *extent of each factor's influence for different groups of students*. Further research needs to delve deeper into these two issues, before an effective comprehensive approach to transition planning to IL can be developed and this study aims to address these questions.

Another aspect of research in the IL field that needs to be developed in order to make accurate recommendations for interventions is *theory*. The concepts described in the theoretical framework are used for other areas of special education research, but not transition to IL. Most studies reviewed on contextual factors lack any references to theory and instead adopt a more pragmatic stance utilizing a risk and protective factors framework, where access or removal of certain factors increase the chances of better IL outcomes (e.g. Test et al., 2009; Mazzotti et al., 2015; Haber et al., 2015). It can be that given the stagnant progress in improving postsecondary outcomes, most researchers are more concerned with proposing interventions and changes in

policy or practice, with seemingly more rapid results, than trying to explain how these risk and protective factors impact students and developing theories based on their findings.

In terms of studies proposing interventions to increase IL skills, the overwhelming theory employed is behaviorism, with intensive, individually delivered instruction leading to increases in IL skills (see Appendix A). Although this approach has been successful in teaching individual skills, it does not offer a systemic approach to improving IL outcomes.

The inclusion criteria for the intervention studies create a limitation for this review. Studies were included if they specifically targeted life skills needed for independent living, but there might be other independent living interventions that authors did not identify as such, and those studies were excluded. This choice might narrow the variety of perspectives and paradigms included.

2.6 Study Implications

The review of literature identified a series of factors that lead to better postsecondary IL outcomes and strategies of teaching life skills to students with disabilities, but also a series of gaps in understanding. Very little research connects interventions to postsecondary IL outcomes, and even less shows a change in rates of IL. This is definitely a shortcoming in the field, but even in the area of contextual predictors, where we now know more about which factors impact IL, there is not a good understanding of *how* these factors affect students. Lack of theories affects the way research is conducted, with studies designed to assess the short-term effect of interventions. In order to develop effective interventions that have long-term impact on postsecondary IL outcomes, we need to better understand processes and incorporate this knowledge in longitudinal studies that follow participants until it can be determined if the intervention is effective or not.

This study aims to investigate those factors and combination of factors that are good predictors for IL and moderating variables by answering the following questions:

1. To what extent to individual, skills, family, and school factors predict postsecondary living status for youth with disabilities?

2. What are the moderating effects of the significant predictors?

Understanding the associations between selected predictors and postsecondary living status will provide transition program developers with an understanding of factors they need to include and which ones have the strongest association with better IL outcomes. Moreover, given the database used for analyses provides a nationally representative sample, findings can be used to make large-scale recommendations such as for policy.

2.7 Summary

In light of the findings regarding best practices and interventions for increasing IL skills in students with disabilities, the author proposes a logic model (Figure 1) where school-based services would: 1) increase the knowledge about postsecondary living options, 2) work to enhance a student's adaptive and IL skills, and 3) connect students with adult services while still in school. According to the findings of this literature review, the inclusion of these elements would lead to more options and knowledge for choosing a residential setting, and thus better IL outcomes.

Input	Through	Process	Leads to	Output
School-based Special Education Services	• Direct instruction • Practice in the community/simulated environments • Interventions to increase self-determination • Training for parents	1. Increasing knowledge of postsecondary residential options 2. Teaching skills needed for IL (functional, adaptive) 3. Connecting students to postsecondary service providers		Better informed choices regarding postsecondary residential options

Figure 1. Logic Model

Chapter III

Methodology

This correlational study performed secondary data analyses of a nationally representative database, the National Longitudinal Transition Study 2 (NLTS2). Its aim is to identify those factors from three categories (i.e. individual characteristics, family, and school), which are predictors of postsecondary IL status and factors that have a moderating effect on these relationships.

3.1. Research Questions

This study investigates the effects of various individual, family, and school factors on postsecondary living status by answering the following questions:

1. To what extent to individual, skills, family, and school factors predict postsecondary living status for youth with IDD?

2. What are the moderating effects of significant predictors?

3.2. Population

Sampling Method

The NLTS2 was designed to provide a nationally representative sample of youth with disabilities as they transition from secondary school to adulthood. Information was gathered over a 10-year period (2000–2010) from parents, youth, teachers, and schools across the country. Data

was organized in five waves of data, matching collection times that occurred every 2 years.

Table 1 illustrates the data collection instruments and times.

Table 1

Data Collection Schedule

Instruments	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Parent/Youth Phone Interview and/or Mail Survey	2001*	2003	2005	2007	2009
Student Assessment*	2002	2004			
School Characteristic Survey	2002				
School Program Survey	2002	2004			
Teacher Survey	2002	2004			
Transcript	2002	2003/04	2005	2006/07	2008/09

*Only parent interviews collected in Wave 1
*Although student assessments were conducted over two waves, there was only one assessment per sample member

      The NLTS2 included over 11,200 youth aged 13 to 17 years in December 2000. The participants were selected from students identified as having a disability through a two-stage sampling process. In the first stage, a stratified random sample of more than 500 school districts and almost 40 special schools was selected, with stratification based on geographic region, district size, and community wealth. In the second stage, students were randomly selected from each of the 12 federally designated special education disability categories with a target of 1,250 students per disability category at the first wave of data collection to achieve a sufficient sample at the end of the study (SRI International, 2000). Sampled youth were weighted to create a nationally representative sample of all students receiving special education services in public schools or state-operated special schools, by disability category, and at each of the ages within the 13- to 17-year-old age range.

Data Collection Instruments

Data were collected from multiple sources using a variety of instruments. This study uses predictors from Wave 1, with the exception of inclusion, which is throughout high school, and postsecondary living status outcome from Wave 5. More specifically, uses data from the *Wave 1 Parent Survey and District Provided Data (PS), Wave 5 Parent/Youth Survey (PYS), Wave 1/Wave 2 Direct Assessment (DA), Wave 1 Student's School Program Survey (SPS),* and the *Wave 5 Transcript Data (TD).* The latter data file was used to determine whether the student was included in general education throughout high school.

For PS, interviews were conducted by telephone with a parent or guardian; when a parent could not be reached by telephone, selected questions were sent through a mail survey. The questions probed academic and non-academic areas that were identified as essential for student outcomes. In PYS, both youth and parents were interviewed through the same process.

Students were directly assessed in Waves 1 and 2 and their results are combined in one data file. Information regarding school and program characteristics, including the SPS was collected through surveys sent to school personnel who were knowledgeable about each individual student and included information regarding performance and classroom experience. Students' transcripts spanning the duration of the study were included in the TD data file.

Participants

Participants were selected using criteria meant to highlight the effect of predictor variables and maximize the number of cases included. For this purpose, participants included were in school in Wave 1, because this wave was the least affected by attrition, and it included the variables on family and school factors identified as potentially impactful in the literature

review. Predictors were also chosen from the SA survey, which includes combined data from Waves 1 and 2.

The outcome was selected from Wave 5, when most youth had been out of high school for 2 to 8 years, depending on their age in Wave 1. Only those participants who were out of school were selected in this wave, because this study focuses on the postsecondary living status. Therefore, analyses were performed on a subset of NLTS-2 participants that only included those who were in school in Wave 1, and out of school in Wave 5.

3.3. Variables

The *predictors* included in this study mirror the ones identified in Chapter 2, and include personal characteristics, skills, family, and school factors. The personal characteristics that will be included are ethnicity, disability label, family's income level above poverty, gender, and age. The skills included in this study are functional mental, social, self-care, and household responsibility skills, along with three self-determination constructs: personal autonomy, self realization, and psychological empowerment. The self-determination constructs were determined to be representative for self-determination (Shogren, Kennedy, Dowsett, & Little, 2014), but without the fourth construct in the Self-Determination Scale a freestanding self-determination variable cannot be constructed (Shogren, Villarreal, Lang, & Seo, 2017). The family factors that will be included are general parental involvement, parental expectations for independent living, parental participation in IEP meetings, and participation in community activities. The school factors that will be included are having a transition plan that specifically includes training for independent living, inclusion in general education, student's role in transition planning, and participating in a school-based work program.

A few variables were computed or recoded. Ethnicity originally had six categories that

included "White," "African American," "Hispanic," "Asian," "American Indian," and "Other." Because of low counts for the latter three categories, they were collapsed into a single "Other" category. Parental involvement was created by summing the four parental involvement indicators, which Shogren and Villareal (2013) suggested demonstrated reasonable fit (parent attending parent-teacher conferences, general school meetings, school or class events, and volunteered at school). One single indicator of parental involvement in the IEP planning was used, as recommended by Shogren and Villareal (2013). Inclusion, defined as earning 80% or more of credits in general education was recoded from a variable representing the percent of credits each student earned in general education, which ranged from 0 to 100%. This criterion for inclusion was determined by the Department of Education (2011), and used by Goodman and collaborators (2011), and Rojewski and collaborators (2015).

The *moderators* that will be used are the factors determined to be predictive of independent living.

The *outcome* variable is based on a single item in the Wave 5 Parent/youth survey asking where the youth currently lives. Similarly to Bouck (2014), a dichotomous variable was computed combining all the living status items in two categories, where youth were considered to live independently if they lived on their own, with a spouse or roommate, in college or military dormitories, or on the job (coded as 1). Youth were considered not to live independently if they lived with a family member, foster parent/guardian, in an institution, or residential home (coded as 0). Detailed information about all study variables, including respondent, description, type, range, and how missingness applies to each variable can be found in Appendices B and C.

3.4. Analytic Procedures

Complex Sampling Procedures

This study involves secondary analyses of the NLTS-2 data. All analyses account for the complex sampling procedures employed during the NLTS-2 by using an analysis plan and the complex samples procedures in STATA. The analysis plan accounts for the two sampling stages and the weights recommended for analyses. In this case, the recommended weight is the one for the data file with fewer cases, which is the Wave 5 PI (IBM, 2011). The same approach to weighting has been employed in previous studies based on this database (e.g. Lombardi et al., 2012, Papay & Bambara, 2014).

In order to perform analyses, the data files were merged. Cases with missing data on either the predictor or outcome variables were excluded listwise from analyses.

Missing Data

Variables have between 18% and 63% of data missing; a summary analysis can be found in Tables 2-6. Pattern analyses did not reveal obvious patterns in missing data, and because missing data were eliminated listwise, they can be considered missing completely at random. Accordingly, analyses can be performed on non-imputed data without the missing values skewing the findings (Enders, 2010). The firm that collected data for the NLTS -2 study, SRI, suggests using non-imputed data because the available weights account for the missing values (NSTTAC, 2012). However, interpretation of factors with an attrition rate of 50% or higher will be made cautiously, because despite a lack of pattern, missing cases might still not be missing at random.

Table 2

Individual Characteristics Missingness

Variable	Total Count*	Count* (in sample)	Missingness (%)
Ethnicity	9230	4910	18.1
Disability Label	9230	4910	18.1
Family's Income Above Poverty	8020	4430	28.8
Gender	9230	4910	18.1
Age	9220	4910	18.2

*All counts have been rounded to the nearest 10, according to IES Procedures

Table 3

Skills Missingness

Variable	Total Count*	Count* (in sample)	Missingness(%)
Functional Mental Skill	8940	4840	20.7
Self-Care Skill	9120	4880	19.1
Social Skills	8790	4780	22.1
Household Responsibilities Scale	8970	4860	20.5
Personal Autonomy	4800	2780	57.5
Self Realization	2990	2900	55.8
Psychological Empowerment	4970	2900	55.9

* All counts have been rounded to the nearest 10, according to IES Procedures

Table 4

Family Factors Missingness

Variable	Total Count*	Count* (in sample)	Missingness (%)
Parental Expectations	8630	4710	23.5
General Parental Involvement	9000	4880	20.1
IEP Participation	8160	4530	27.6
Community Activities	2250	4870	20

*All counts have been rounded to the nearest 10, according to IES Procedure

Table 5

School Factors Missingness

Variable	Total Count*	Count* (in sample)	Missingness (%)
Inclusion	6520	3170	42.2
Primary Transition Goal is IL	4200	2120	62.8
Student's Role in Transition Planning	4120	2082	63.4
Participated in School Sponsored Work Activity	5110	2870	54.7

*All counts have been rounded to the nearest 10, according to IES Procedures

Table 6

Outcome Missingness

Variable	Total Count*	Count* (in sample)	Missingness (%)
Living Status	5110	4730	54.7

*All counts have been rounded to the nearest 10, according to IES Procedures

A dummy variable was created to assess whether the group of participants excluded based on having missing values on the outcome variables differed from the group included in this study. A Chi-Square test was performed to assess whether the missing and non-missing values accounted for differences in the predictors. For most predictors the missing did not account for any differences, except for Social Skills and Self Realization. Interpretations for these variables will be made cautiously, knowing that attrition might be biasing the results in these cases. However, given that the analysis was performed for 20 variables, it is also reasonable to expect that two cases might be significant due to chance alone, so analyses were performed using these variables in the final model.

Table 7

Test of Independence Between Missing and Non-missing Data

Variable		Chi-Square	Adjusted F	df1	df2	Sig.
Ethnicity	Pearson	23.990	.657	2.686	1125.394	.562
	Likelihood Ratio	20.398	.559	2.686	1125.394	.623
Disability	Pearson	11.393	1.068	3.240	1357.396	.365
	Likelihood Ratio	12.955	1.214	3.240	1357.396	.304
Family's Income Above Poverty	Pearson	.773	.076	1	419	.783
	Likelihood Ratio	.758	.074	1	419	.786
Gender	Pearson	1.602	.227	1	419	.634
	Likelihood Ratio	1.581	.224	1	419	.637
Age	Pearson	15.279	.455	2.949	1235.676	.711
	Likelihood Ratio	16.482	.491	2.949	1235.676	.686
Functional Mental Skill	Pearson	99.926	1.651	5.260	2203.952	.139
	Likelihood Ratio	81.888	1.353	5.260	2203.952	.237
Social Skills	Pearson	220.012	2.971	8.904	3730.570	.002
	Likelihood Ratio	178.090	2.404	8.904	3730.570	.011
Household Responsibilities	Pearson	44.792	.716	7.294	3056.331	.664
	Likelihood Ratio	47.509	.760	7.294	3056.331	.627
Self-Care Skills	Pearson	27.456	1.605	1.196	500.936	.207
	Likelihood Ratio	24.987	1.461	1.196	500.936	.231
Personal Autonomy	Pearson	130.743	1.429	10.214	4279.712	.159
	Likelihood Ratio	129.740	1.418	10.214	4279.712	.163
Self Realization	Pearson	132.141	3.124	5.701	2388.743	.006
	Likelihood Ratio	121.087	2.863	5.701	2388.743	.010
Psychological	Pearson	29.045	.833	2.588	1084.222	.461

Empowerment	Likelihood Ratio	37.163	1.065	2.588	1084.222	.357
Parental Expectations	Pearson	29.226	1.840	2.478	1038.206	.149
	Likelihood Ratio	31.411	1.977	2.478	1038.206	.128
General Parental Involvement	Pearson	15.482	.424	3.578	1499.188	.771
	Likelihood Ratio	14.729	.403	3.578	1499.188	.785
Parental IEP Participation	Pearson	3.819	.460	1	419	.498
	Likelihood Ratio	3.560	.429	1	419	.513
Participated in Community Activities	Pearson	7.593	.877	1	419	.350
	Likelihood Ratio	7.639	.882	1	419	.348
Inclusion	Pearson	.930	.101	1	419	.750
	Likelihood Ratio	.937	.102	1	419	.749
Primary Transition Goal is IL	Pearson	.374	.057	1	419	.811
	Likelihood Ratio	.373	.057	1	419	.811
Student's Role in Transition Planning	Pearson	24.646	1.160	2.155	902.881	.316
	Likelihood Ratio	24.023	1.130	2.155	902.881	.326
Participated in School Sponsored Work Activity	Pearson	1.492	.404	1	419	.525
	Likelihood Ratio	1.605	.435	1	419	.510

Note. The adjusted F is a variant of the second-order Rao-Scott adjusted chi-square statistic. Significance is based on the adjusted F and its degrees of freedom.

Data Analysis

Both research questions involve predictive relationships using a dichotomous outcome variable, so the analysis should was performed using a *logistic regression*, a method used sporadically in the first half of the 20th century and formally introduced by Cox in an article in 1958 and a book in 1970 (Agresti, 2013). Logistic regression is also known as response probability (Hancock & Mueller, 2010) due to the work of Rasch who, around the same time,

introduced a logit model knows as the Rasch model, which lead to generalizations of the logistic regression in educational testing (Agresti, 2013). British statisticians Nelder and Weddenburg incorporated the logistic regression model in the greater category of generalized linear models (Agresti, 2013). With a long history of being used for prediction analyses, logistic regression is becoming increasingly employed in educational research (Peng, Lee, & Ingersol, 2002).

Logistic regression is also the recommended method for modeling with predictors using different scaling (Osborne, 2008). In this study's case, some predictors are categorical and some continuous.

Assumptions Check

Logistic regression has fewer assumptions than linear regression, and the main one is that the dichotomous variable is binomially distributed, according to Peng, Lee, and Ingersol (2002). This distribution can be either tested or assumed if the data are randomly collected. Since the NLTS2 sample is randomly selected, this study meets the binomial distribution criteria. In order for results to be considered stable Peng et al. (2002) and Stoltzfus (2011) advise a minimum sample size of 100, or a ratio of 10 to 1, which this study widely exceeds.

Other assumptions of logistic regression according to the Institute for Digital Research and Education (2016) are (1) observations are independent, and in the NLTS2 each entry corresponds to one survey item for each individual case, (2) the model is parsimonious (no extraneous variables and no essential variables omitted), which is addressed through the purposeful selection method, (3) the independent variables are not linear combinations of each other, which is assessed with a collinearity test, as follows, and (4) there needs to be a linear relationship between the continuous predictors and the logit transformation of the outcome.

Correlation analyses revealed various degrees of correlation among the predictor

variables, and between predictors and the outcome variable, and that is to be expected in educational sciences (Preacher, Rucker, & Hayes, 2007). Highly correlated predictors can produce unreliable b-weights and inflated standard errors, which affect the interpretation of effect of individual predictors, in a process called collinearity (Osborne, 2008). However, collinearity tests did not reveal a potential correlation problem in the predictors selected for this study (Table 8). Tolerance and Variance Inflation Factors (VIF) were computed with the *"collins"* command in STATA. The rule of thumb for tolerance values is that they should be higher than .1 and the values for predictors used in this study ranged between .548 and .983. Conversely, the values VIF values should be less than 10, and the predictor's ranged between 1.017 and 1.826 (UCLA Statistics Consulting Group, 2016). Both measures indicate that the model is not affected by collinearity.

Table 8

Collinearity Statistics

Variable	VIF	Tolerance
Ethnicity	1.20	0.8358
Disability Label	1.09	0.9154
Gender	1.10	0.9098
Family's Income Above Poverty	1.18	0.8481
Age	1.06	0.9408
Mental Skill	1.26	0.7921
Social Skill	1.16	0.8586
House Responsibility Skill	1.33	0.7516
Self-Care Skill	1.36	0.7351
Personal Autonomy	1.40	0.7125
Self Realization	1.47	0.6807
Psychological Empowerment	1.31	0.7607
Parental Expectations	1.59	0.6284
General Parental Involvement	1.19	0.8404
Parental Participation in IEP Meeting	1.10	0.9122
Community Activity Participation	1.17	0.8526
Academic Inclusion	1.19	0.8398
Primary Goal is IL	1.06	0.9405
Student's Role in Transition Planning	1.16	0.8626
Student Participated in School Sponsored Work Activity	1.07	0.9316

Variables Treatment

The to the greatest extent possible, variables were kept in the form they were collected. In order to make the most accurate estimations, all continuous variables were treated as such and only recoded for estimation of interactions. This satisfies the Thompson et al. (2005) quality criteria. Variables that are aggregates of a set of the original variables obtained through addition (such as parental involvement) were treated as continuous, in order to preserve information (MacCallum, Zhang, Preacher, & Rucker, 2002).

Model Building

The variables that are part of the model were *selected* using findings from the literature regarding potential predictors and Hosmer, Lemeshow and Sturdivant's (2013) purposeful selection method. This method represents a series of seven successive steps that allows for building a robust regression model:

1) Univariate analysis of each predictor,

2) Each variable is introduced in the model and their statistical significance assessed,

3) Correlation coefficients are compared between the original and model resulting from step 2 and if there is more than a 20% difference variables that were eliminated and cause the change in coefficients would be refitted in the model,

4) Other variables that are not identified as having an effect on the outcome are introduced, one at a time to verify that they would not bring a significant contribution to the model itself,

5) Each continuous variable will be checked to see if the logit increases/decreases linearly as a function of the covariates,

6) Once the main effects model is in place, interactions can be checked. For variables with more than two levels, dummy variables will be created for assessing the interaction.

7) In the final step, the model's adequacy and fit will be checked (p. 90-93).

In addition to this method, predictors were introduced in blocks according to the three categories they belong to (individual, family, and school) in order to see the change they cause in the pseudo R^2 and identify associations between various predictors.

This selection criterion helps avoid the methodological issues associated with processes such as stepwise regression identified by Thompson (1995) and Ratner (2003), and conforms to the selection procedures recommended by Osborne (2008). Bursac et al. (2008) confirmed that purposeful selection is superior to stepwise regression by retaining significant covariates that the compared method did not. This selection method also ensures that the model is neither under- nor over-fitted, which also satisfies the second assumption criterion. Over- and underfitting are treats to logistic regression because they over or under estimate the degrees of freedom and could lead to untrustworthy results (Frost, 2015). The size of the NLTS-2 lends itself to complex modeling, but even so, interpretation should hold into account missing data that might be more prevalent in certain populations or for certain variables.

In order to verify the model's goodness of fit the link test was used. The link test assumes that if a regression equation is properly specified, there should be no other significant predictors unless by chance. This test identifies if there is another predictor that needs to be included in order for the outcome to relate to the predictors already part of the model.

The link test uses the following equation:

$$y = f(X\beta)$$

If $\hat{\beta}$ is the parameter estimate, the link test calculates

$$\_hat = X \hat{\beta}$$

and

$$\_hatsq = \_hat^2$$

The model is refit using these two variables and the test's significance is based on the significance of _hatsq (STATA, 2016). A model is considered to have a good fit using the link test if the _hat is significant and the _hatsq is not (IDRE, 2016). Other postestimation options for logistic regression were considered, but they did not account for the complex sampling design using a subpopulation.

Interpretation

Logistic regression yields log odds coefficients, which can be transformed into *odds ratios*. These ratios range from 0 to infinity, and represent the relative increase or decrease in the odds of a certain outcome given a predictor. The odds are computed as the probability of an event happening divided by the risk of the event not happening, and the odds ratio divides the odds of a group exposed to the predictor to the odds of a reference group (Sainani, 2011).

Effect sizes are a recommended measure to be included (Osborne, 2008). These will be computed using the pseudo R^2 (Osborne, 2008; Bewik et al., 2005; Agresti, 2013), or the overall effect size (Allen & Le, 2008). In the case of logistic regression using weights and subpopulations the only measure of R^2 that can be computed is the McKelvey and Zavoina's R^2. This can be regarded as a measure of proportion of variance accounted for (Ender, 2016; IDRE, 2016). This measure uses a latent variable computed using the following formula:

$y^* = \beta' Var(\mathbf{x})\beta$.

The formula for computing this R^2 is the following:

$$R^2_{M\&Z} = \frac{Var(y^*)}{Var(y^*)+Var(e)}$$

McKelvey and Zavoina's R^2 was computed using the "*fitstat*" command after performing the logistic regression analysis in STATA.

Moderation

The second research question regarding the relationships between predictors to highlight populations who attain better outcomes can be answered by using *moderator* analysis. Moderation is used to assess whether the magnitude of a variable's effect depends on an outcome depends on a third variable (Hayes, 2012). Figure 2 describes the regular prediction path in a regression model.
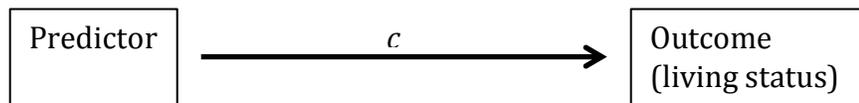
Figure 2. Moderation Conceptual Model represents a diagram of the main effect of a predictor on the outcome, where *a* represents the regression coefficient, or the path between the predictor and outcome.

Figure 3 describes the prediction path when a moderator is considered in the analysis.
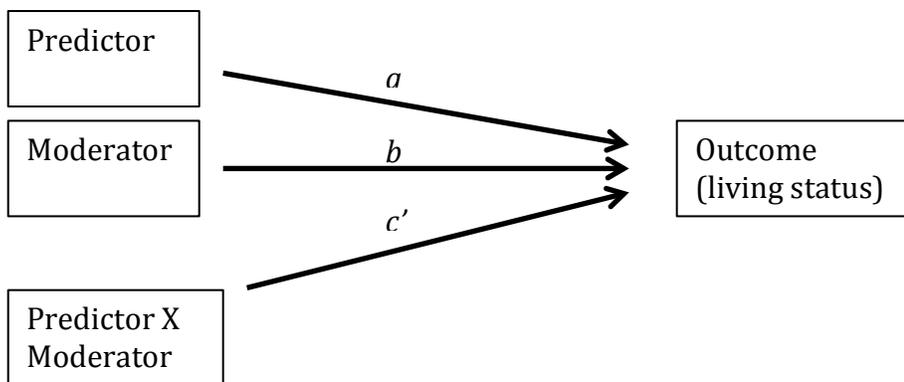
Figure 3. Statistical Path Model represents the effect of a moderator, which alters path *a* and its interaction with the predictor

Moderators introduce a new level of explaining the relationship between the predictor and outcome by differentiating according to its levels (Farmer, 2012). Kreamer and collaborators (2008) outline three criteria for establishing moderation: 1) the interaction between the moderator and predictor must be significant, 2) the moderator must not cause the predictor, and 3) the moderator must conceptually precede the predictor, a condition meant to ensure there is no causality between the moderator and predictors.

Moderators were chosen based on the review of the literature to either identify differences between various groups of individual characteristics, or to identify which family and school factors modify others. The school factors are especially useful for moderation, because if a factor is also a moderator that has the potential to increase the rate of IL, it provides a good foundation for an intervention with students or teachers to increase this outcome.

Both the main effects and interactions were performed using STATA 14, using complex sampling procedures and Taylor linearization for all analyses.

3.5 Summary of Methodology

This study investigates whether certain individual, skills, family, and school factors predict and moderate the relationship with postsecondary living status. It uses a logistic regression analysis for prediction and interactions for moderation, accounting for complex sampling through weighting and for purposeful sampling through the use of subpopulations.

Chapter IV

Results

The purpose of this study was to identify the predictors for postsecondary living status in terms of individual characteristics, skills, family, and school factors. Another goal was to investigate whether these factors could explain some of the relationships identified through the first aim by acting as moderators between predictors and outcome. As mentioned in the previous chapter, the analysis used to achieve these purposes is logistic regression with interaction analyses to test moderation. The conventional notations will be used for the parameter estimates, or logit coefficient (b will denote the coefficient).

The subpopulation for this study included youth who were in school in Wave 1, at the beginning of the study, and out of school in Wave 5, when all participants would have been out of school for between two and eight years. After restricting the subpopulation and accounting for missing cases on a listwise basis, the final number of participants was 710 (rounded to the nearest ten), or an estimated national population of 280,860.

Research Question 1: To what extent do individual, family, and school factors predict postsecondary living status for youth with IDD?

Research Question 1 examined the predictive power of several individual characteristics, family, and school factors. The hypothesis tested with this question is that all the factors that have been identified in the literature as being associated with living status will be statistically

significant as predictors. Findings, presented in Table 9 indicate that some factors are statistically significant as predictors for postsecondary living status.

4.1. Predictors

Individual characteristic variables were selected from the first wave of data collection and represented in terms of ethnicity, disability category according to the IDEA 2004 recognized categories, gender, family's income level conceptualized as above poverty at the time of data collection, and age.

4.1.1. Individual Characteristics

Ethnicity was a significant predictor for postsecondary living status, with all ethnicity categories performing better in postsecondary independent living than African Americans. This group was chosen as the reference as it has been evidenced in the literature as consistently achieving poorer postsecondary achievements than other ethnic groups (Newman et al., 2011). Specifically, being Hispanic ($b = 1.657$, $p = .05$) increased the odds of someone living independently in the community by 5 times compared to being African American, being White ($b = 2.434$, $p = .001$) increased the odds of someone living in the community by 11 times, and being in the Other category ($b = 1.657$, $p = .05$), increased the odds of living independently by 183 times. The Other group included a composite of all the other ethnicity groups. This latter result might be an artifact of the low number in the category of students categorized as Other who lived in the community (30 participants, rounded to the nearest 10). This, along with a high standard error ($SE = 216$), cast a shadow of doubt on the accuracy of this odds ratio. This may be due to overfitting issues for this specific group, which represents only 3% of the total number of valid cases of the ethnicity variable. However, the test still identified a statistically significant

difference between the Other and African American groups, with the Others being more likely to achieve independence.

Disability label was another significant predictor for certain disability categories. The literature suggested that the disability categories that performed the poorest in terms of postsecondary community living are MD (Sanford et al, 2011) and ASD (Wagner et al, 2005; Wehman et al., 2014). Both categories were used as contrast groups in the overall model, and the ASD category provided more statistically significant comparisons with other categories, highlighting this group's low performance in terms of achieving postsecondary community living.

Four disability categories were significantly different from the ASD group: LD, ID, ED, and Deaf/Blindness. The odds of IL for youth with LD ($b = 3.864$, $p = .009$) were 39 times the odds of IL for ASD. Correspondingly, the odds of IL for youth with ID ($b = 4.119$, $p = .01$) were 44 times the odds of those with ASD; the odds of IL for youth with ED ($b = 3.206$, $p = .04$) and youth with Deaf/Blindness ($b = 2.995$, $p = .081$) were 25 times and 20 times (respectively) more than the odds of the ASD control group. The latter is a surprising result, especially since there is no indication that it might be an artifact of the number of participants or the analysis used.

Another individual characteristic used in the model was **gender**. The odds of women ($b = 3.095$, $p = .025$) living independently are 3 times the odds of men.

The other two individual characteristic factors considered, the family's income above the poverty level and age were not statistically significant in this model.

4.1.2 Skills

House responsibility skills and psychological empowerment were the only two non-significant relationships in this category. Increasing **self-care skill** scores had a negative

relationship with living independently (b = -0.720, p = .039), youth with higher scores being 0.5 times as likely as those with lower scores to live independently. The odds of IL for participants who received higher scores in **functional mental skill** (b = 1.333, p = .025) were 1.3 times the odds of those with lower scores.

The relationship between **social skills** and IL is negative, with increasing scores being associated with lower achievement of IL (b = -0.159, p = .033). The odds of participants who received higher scores in social skills were .85 times those of the lower social skills scores group to live independently. Interpretation of this relationship, should also consider the fact that analysis between missing and non-missing data revealed differences between the two groups, which might indicate that data are not missing at random within this factor. Therefore, the relationship identified could be due to a true pattern in the data, but could also be attributed to the purposeful attrition of participants.

The two self-determination concepts that emerged as significant predictors were personal autonomy and self-realization, both with a small effect on the outcome. Youth with higher scores in **personal autonomy** (b = 0.181, p = .009) had 1.2 times more odds of living independently than those with lower scores.

Oddly, **self-realization** had a negative relationship with IL. Youth with higher scores in self-realization (b = -0.304, p = .010) had 0.74 the odds of living independently of those with lower scores. This relationship should also be interpreted cautiously, as the comparison between missing and non-missing cases revealed differences between groups. If cases are not missing at random, this finding could be an artifact of this instead of a true relationship in the data.

4.1.3 Family Factors

Four family factors were considered in the analysis: parental expectations, general parental involvement school, parental participation in IEP meetings, and participation in community activities, out of which two were significant predictors. One of these factors was **parental expectation** ($b = 1.092$, $p = .011$), with those whose parents had higher expectations that their child would live independently without supervision having 3 times more odds of living independently in the community than those whose parents did not. Another factor that was marginally significant, **parental involvement** ($b = -0.396$, $p = .072$), indicated that the more involved parents were in general school opportunities, the less likely their children were to live independently in the community; the odds of students whose parents were high involved were .7 times the odds those whose parents were less involved.

4.1.4 School Factors

Four school factors were tested in this model: the student participated in a school-sponsored work activity, the student had a leadership role in transition planning, inclusion (the student received more than 80% of credits in general education), and the student's primary transition goal was to live independently. Of these, two factors were significant. Increasing **student leadership in transition planning** ($b = 1.212$, $p = .019$) was associated with a threefold increase in the odds of living independently compared to those who had less involvement. **Having independent living as their primary transition goal** ($b = 1.557$, $p = .005$) was associated with a fivefold increase in the odds of living independently.

Table 9

Logistic Regression Results

Variables	Logit Coefficient	Odds Ratios
Individual Characteristics		
Ethnicity		
Hispanic	1.657*	5.244
	(0.842)	(4.414)
Other	5.209**	182.932
	(1.179)	(215.685)
White	2.434**	11.404
	(0.735)	(8.384)
Disability Label		
Learning Disability	3.864**	47.645
	(1.474)	(70.240)
Speech Impairment	2.339	10.372
	(1.600)	(16.598)
Intellectual Disability	4.119**	61.502
	(1.585)	(97.454)
Emotional Disturbance	3.206*	24.673
	(1.551)	(38.267)
Hearing Impairment	1.893	6.641
	(1.576)	(10.464)
Visual Impairment	2.704	14.941
	(1.857)	(27.744)
Orthopedic Impairment	2.248	9.471
	(1.838)	(17.409)
Other Health Impairment	2.158	8.652
	(1.422)	(12.301)
Traumatic Brain Injury	0.301	1.288
	(1.962)	(2.364)
Multiple Disabilities	0.544	1.351
	(2.059)	(2.650)
Deaf/Blindness	2.995[†]	19.977
	(1.708)	(34.128)
Gender is Female	1.130*	3.095
	(0.501)	(1.550)
Family's Income Level is Above Poverty	-1.000	0.368
	(0.616)	(0.226)
Age	-0.008	0.992
	(0.314)	(0.312)

Skills and Abilities

Self-Care Skill	-0.720*	0.487
	(0.347)	(0.169)
Functional Mental Skill	0.288*	1.334
	(0.128)	(0.171)
Social Skills	-0.159*	0.853
	(0.074)	(0.063)
House Responsibility Skill	0.031	1.031
	(0.115)	(0.118)
Personal Autonomy	0.181**	1.197
	(0.069)	(0.082)
Self Realization	-0.304**	0.738
	(0.118)	(0.082)
Psychological Empowerment	0.378	1.458
	(0.236)	(0.344)

Family Factors

Parental Expectations	1.091*	2.980
	(0.428)	(1.276)
General Parental Involvement	-0.396†	0.673
	(0.219)	(0.147)
Parental Participation in IEP Meetings	0.244	1.277
	(0.626)	(0.799)
Participation in Community Activities	0.591	1.806
	(0.506)	(0.914)

School Factors

Participation in School-Sponsored Work Activity	-0.094	0.910
	(0.593)	(0.540)
Student's Role in Transition Planning	1.212*	3.359
	(0.515)	(1.730)
Over 80% of Credits Earned in General Education	0.130	1.139
	(0.540)	(0.616)
Independent Living is the Primary Transition Goal	1.557**	4.745
	(0.548)	(2.603)
Constant	-11.324**	0.00001
	(4.079)	(0.00005)
Total Count	710	

Note. Standard errors in parentheses
** $p<0.01$, * $p<0.05$, † $p<0.1$

4.1.5 Assessing the Model

In order to verify the model's goodness of fit the link test was used. The model was refit using two link test variables (_hat and _hatsq) and the test's significance was based on the significance of _hatsq (STATA, 2016). A model is considered to have a good fit using the link test if the _hat is significant and the _hatsq is not (IDRE, 2016). The model used in this analysis met these criteria (see Table10).

Table 10

Link Test Results

Community Living	Coefficient	Standard Error	Significance
_hat	1.005	0.156	0.000
_hatsq	0.086	0.057	0.137
_cons	-0.170	0.303	0.576

Another postestimation measure used is McKelvey and Zavoina's R^2 ($R^2 = .998$). Typically, the R^2 in a logistic regression cannot be interpreted as the percent of variability explained by the outcome, but a high number still indicates a strong model.

Research Question 2: What are the moderating effects of factors identified to be significant predictors?

The factors chosen for these analyses were based on theoretical constructs and hypothesis testing. The goal was to identify the malleable factors that are associated with better IL outcomes that can be considered in interventions.

4.2. Moderators

The first set of factors used in moderation analyses is individual characteristics. In terms of grouping, ethnicity and disability label have been identified in the literature review as factors associated with postsecondary living status. They also emerged as statistically significant predictors for IL in the previous analysis. Therefore, for the purpose of offering more intensive and specialized services to certain groups, using ethnicity and disability label in moderation analysis will identify the population that perform poorer in terms of achieving independent community living. The hypothesis is that African Americans and students with ASD will have the lowest outcomes across interactions.

4.2.1 Ethnicity as Moderator

The interaction between ethnicity and functional mental skills suggested further differentiations between ethnic groups, presented in Table 11. The main effect for mental skills was 0.29, and this interaction decreased the effect for Hispanics ($b = -0.217$, $p = .026$), but the direction of the relationship remained positive. So, increasing mental skill scores are positively associated with IL for African American youth, and not associated for Hispanic youth. The relationship was not significant for any of the other ethnicity groups.

The analysis of the interaction between ethnicity and self-care skill scores identified the only significant relationship in those categorized as Other when compared to African Americans. The main effect of self-care skill negatively predicted IL for all students with disabilities ($b = -0.72$), but the interaction revealed a positive effect of self-care skills for those in the Other category ($b = 1.709$, $p = .015$). Therefore, increased self-care scores negatively predicts IL for African Americans and positively predicts it for Others.

The analysis of the interaction between ethnicity and parental expectations that the youth will live independently without support identified two significant relationships. Parental expectations positively predicted IL for all students ($b = 1.09$). However, the interaction revealed a decreased effect on IL for Hispanics ($b = -0.509$, $p = .019$), and increased effect for Whites ($b = 0.477$, $p = .016$) when compared with African Americans. So the interaction between ethnicity and parental expectations positively predicts IL for all groups, but with an increased effect for Whites and decreased for Hispanics.

General parental involvement negatively predicted living independently for all students ($b = -.40$). The analysis of the interaction between ethnicity and parental involvement identified a significant and a marginally significant relationship. The negative relationship between increased

parental involvement was accentuated for those in the Other (b = -1.472, p = .009) and White (b = -0.322, p = .098) categories when compared to the odds of IL for African Americans. So, the effect of parental involvement was more detrimental for Others and Whites than for African Americans and Hispanics in terms of their odds for living independently.

In summary, increasing functional mental skills, parental expectations, and parental involvement were associated with increasing the odds of African Americans to live in the community than other ethnic groups, except for increasing parental expectations in Whites. Increasing self-help skills made a large positive impact on the odds of IL living for participants in the Other category.

Table 11

Interactions with Ethnicity

Variables	Coefficient	Odds Ratios
Ethnicity X Mental Skill		
Hispanic	-0.217*	0.805
	(0.097)	(0.078)
Other	0.306	1.358
	(0.308)	(0.418)
White	0.006	1.006
	(0.074)	(0.075)
Ethnicity X Self-Care Skill		
Hispanic	0.076	1.079
	(0.383)	(0.413)
Other	1.709*	5.524
	(.696)	(3.847)
White	0.169	1.185
	(0.303)	(0.359)
Ethnicity X Parental Expectations		
Hispanic	-0.509*	0.601
	(0.217)	(0.130)
Other	0.575	1.777
	(0.602)	(1.070)
White	0.477*	1.611
	(0.197)	(0.318)
Ethnicity X Parental Involvement		
Hispanic	-0.333	0.717
	(0.23)	(0.165)
Other	-1.472**	0.229
	(0.563)	(0.129)
White	$-0.322^{\dagger}$	0.724
	(0.194)	(0.141)

Note. Standard errors in parentheses; the control group is African Americans
** $p<0.01$, * $p<0.05$, † $p<0.1$

4.2.2. Disability Label as Moderator

When investigating the moderating effect of disability label, the only significant relationships were with parental expectations, functional mental skill, and self-care skill. The same trend in data can be identified in all three analyses.

Parental expectations positively predicted IL for all students ($b = 1.09$). The analysis of the interaction between disability label and parental expectations revealed that the logit was reduced for youth in the ID category ($b = -.610$, $p = .035$), ED category ($b = -0.796$, $p = .025$), OI category ($b = -0.632$, $p = .042$), and LD category ($b = -.910$, $p = .006$) when compared to youth in the ASD category. Therefore, increased parental expectations still yielded a positive predicted relationship with IL for all disability labels, but less for those in the ID, ED, OI, and LD categories when compared to students with ASD.

Functional mental skill positively predicted IL ($b = 0.29$). The analysis of the interaction between disability label and mental skill revealed that the logit was again reduced for youth in the ID category ($b = -0.347$, $p = .004$), ED category ($b = -0.264$, $p = .040$), VI category ($b = -0.291$, $p = .013$), OI category ($b = -0.277$, $p = .041$), OHI category ($b = -0.412$, $p = .003$), LD category ($b = -0.446$, $p < 001$), and Deaf/Blindness category ($b = -0.304$, $p = .018$) when compared with youth with ASD. So, mental skills still positively predicted IL for students in the ED, VI, and OI categories, but less so then for youth with ASD. However, the relationship changed direction for youth in the ID, VI, OHI, LD, and Deaf/Blindness categories, where mental skills negatively predicted IL when compared with youth with ASD.

Self-care skill negatively predicted IL for all participants ($b = -0.72$). The analysis of the interaction between disability label and increased self-care skill scores revealed that the logit was reduced for youth in the Speech Impairment ($b = -0.956$, $p = .009$), OI ($b = -0.552$, $p = .065$),

75

OHI (b = -0.605, p = .075), and MD (b = -0.687, p = .047) categories compared to youth with ASD. The relationship between self-care skill and IL was already negative, but in the case of students with Speech Impairment, OI, OHI, and MD the slope is even more negatively accentuated compared to youth with ASD.

All three interaction analyses suggest that although youth with ASD tends to have the lowest odds of living independently, increased scores in parental expectations, mental, and self-care skills make a much bigger positive difference for this population than any other disability category.

Table 12

Interactions with Disability Label

Variable	Coefficient	Odds Ratios
Disability X Parental Expectations		
Speech Impairment	-0.406	0.666
	(0.323)	(0.215)
Intellectual Disability	-0.610*	0.543
	(0.289)	(0.157)
Emotional Disturbance	-0.796*	0.451
	(0.353)	(0.159)
Hearing Impairment	-0.155	0.856
	(0.362)	(0.310)
Visual Impairment	-0.058	0.943
	(0.347)	(0.328)
Orthopedic Impairment	-0.632*	0.531
	(0.309)	(0.164)
Other Health Impairment	-0.243	0.784
	(0.34)	(0.247)
Learning Disability	-0.910**	0.402
	(0.333)	(0.134)
Traumatic Brain Injury	-0.468	0.626
	(0.404)	(0.254)
Multiple Disabilities	-0.535	0.585
	(0.351)	(0.206)
Deaf/Blindness	-0.541	0.582
	(0.342)	(0.199)
Disability X Mental Skill		
Speech Impairment	-0.171	0.843
	(0.138)	(0.116)
Intellectual Disability	-0.347**	0.707
	(0.119)	(0.085)
Emotional Disturbance	-0.264*	0.768
	(0.128)	(0.098)
Hearing Impairment	-0.165	0.848
	(0.144)	(0.122)
Visual Impairment	-0.291*	0.747
	(0.117)	(0.087)
Orthopedic Impairment	-0.277*	0.758
	(0.135)	(0.102)
Other Health Impairment	-0.412**	0.663
	(0.137)	(0.091)
Learning Disability	-0.446**	0.640

	(0.127)	(0.081)
Traumatic Brain Injury	-0.041	0.960
	(0.182)	(0.175)
Multiple Disabilities	-0.258†	0.773
	(0.138)	(0.107)
Deaf/Blindness	-0.304*	0.737
	(0.128)	(0.095)
Disability X Self-Care Skill		
Speech Impairment	-0.956**	0.384
	(0.365)	(0.140)
Intellectual Disability	-0.309	0.734
	(0.396)	(0.291)
Emotional Disturbance	-0.812	0.444
	(0.644)	(0.286)
Hearing Impairment	-.0063	0.939
	(0.540)	(0.507)
Visual Impairment	-0.407	0.665
	(0.375)	(0.250)
Orthopedic Impairment	-0.552†	0.576
	(0.299)	(0.172)
Other Health Impairment	-0.605†	0.546
	(0.338)	(0.185)
Learning Disability	1.035	2.814
	(0.393)	(2.204)
Traumatic Brain Injury	-0.143	0.866
	(0.396)	(0.340)
Multiple Disabilities	-0.687*	0.503
	(0.346)	(0.174)
Deaf/Blindness	-0.473	0.623
	(0.384)	(0.239)

Note. Standard errors in parentheses; the control group is ASD
** $p<0.01$, * $p<0.05$, † $p<0.1$

4.2.3 Skills as Moderators

The next set of variables used in analyses includes skills, with results presented in Table

13. The assumption is that those can be increased in students though direct interventions,

therefore are malleable, and their moderating effect would explain their role in the associations

identified in the first research question. The variables considered for this analysis are Self-Care,

Functional Mental, and Social Skills and two of the three self-determination constructs: Personal

Autonomy and Personal Realization. All these factors are continuous, and the interaction results yield findings regarding the rate of change rather than a difference between levels. When interactions were performed with the same factors that had been transformed into categorical according to the SRI indications, many of the strata used were empty or had few participants, which gave incomplete results. The hypothesis is that these factors' moderating effect would further explain the direction of some of the previous relationships. Analysis results of the interaction between skills and other factors yielded four significant relationships.

Social skills negatively predicted IL for all students (b = -0.16). The analysis of the interaction between mental and social skills revealed a modest increase in the logit (b = 0.016, p = .041) between participants scoring low and high scores. So mental skills can slightly improve the negative relationship between social skills and IL, but the relationship keeps its negative direction. This relationship, similarly to the main effect of social skills, should be interpreted cautiously considering the finding that data are not missing at random for this factor.

Student's role in transition planning positively predicted IL for all students (b = 1.21). The analysis of the interaction between mental skills and student's role revealed a modest decrease in logit (b = -0.135, p = .091) between participants having less or more of a leadership role. In this case mental skills slightly decreased the odds of students with increased leadership in transition planning of living independently.

Parental expectations positively predicted IL for all students (b = 1.09). The interaction between social skills and parental expectations slightly increased the logit (b = 0.057, p = .025) between participants whose parents had decreased and increased expectations. Here, social skills had a slight increasing effect on the positive relationship between parental expectations and IL.

Having IL as a primary IEP goal positively predicted IL for all students (b = 1.56). The interaction between personal autonomy and having IL as a primary goal revealed a slight decrease in the logit (b = -0.132, p = .074) between participants who did not have IL as the primary goal and those who did. So, personal autonomy had a slight decreasing influence on the positive relationship between having IL as a primary goal and living independently.

The significance of these findings will be discussed in the next chapter, but it is important to consider that all these relationships indicate a very slight change in the odds of occurrence.

Table 13

Interactions with Skills

Variables	Coefficient	Odds Ratios
Mental Skills X Social Skills	0.016*	1.016
	(0.008)	(0.008)
Mental Skills X Student's Role in Transition Planning	-0.135[†]	0.873
	(0.080)	(0.070)
Social Skills X Parental Expectations	0.057*	1.059
	(0.025)	(0.027)
Personal Autonomy X Primary Goal IL	-0.132[†]	0.877
	(0.073)	(0.064)

Note. Standard errors in parentheses
** $p<0.01$, * $p<0.05$, [†] $p<0.1$

For the next two categories of factors analyses were not repeated for interactions that were described in the previous section.

4.2.4 Family Factors as Moderators

The family factors identified in the previous analysis will be used to make programmatic recommendations, but these are not factors are unlikely to be directly manipulated in a school intervention. For example, school personnel can address parental expectations during meetings and encourage parents to expect the most of their children, but a direct intervention to alter these would have to be directed to parents, not students in schools. No new significant relationships were identified in this set of factors.

4.2.5 School Factors as Moderators

The last, and most essential set of variables that were considered for moderation was the school predictors, presented in Table 14. These variables can be directly addressed in school interventions, and understanding how they affect the relationship between other factors is essential for intervention design. Only one new interaction was identified as being significant

Parental expectations positively predict IL for all students ($b = 1.09$). The interaction between having IL as the primary IEP goal and parental expectations revealed a decrease in the logit ($b = -0.809$, $p = .017$) between participants whose parents had low and high expectations for living independently. Therefore, those students who had IL as the primary goal had less odds of living independently than those who did not with increased parental expectations, although expectations still positively predicted IL.

Table 14

Interactions with School Factors

Variables	Coefficient	Odds Ratios
Primary Goal IL X Parental Expectations	-0.809**	0.445
	(0.339)	(0.151)

Note. Standard errors in parentheses
** $p<0.01$, * $p<0.05$, † $p<0.1$

4.3 Summary of Findings

This study investigated whether individual, skills, family, and school factors are good predictors for postsecondary living status and if they also moderate the relationship between predictors and the outcome. Analyses identified that the following factors positively predict postsecondary living status: ethnicity, disability label, functional mental skill, personal autonomy, parental expectations, student's role in transition planning, and having IL as the primary IEP goal. The following predictors had a negative relationship with the outcome: self-care skill, social skill, self-realization, and general parental involvement. Ethnicity moderated the relationships between mental skill, self-care skill, parental expectations, and parental involvement and the outcome, disability moderated the relationships between parental expectations, mental skill, and self-care skill, mental skill moderated the relationship between social skills and student's role in transition planning and the outcome, social skill mediated the relationship between parental expectations and the outcome, personal autonomy moderated the relationship between having IL as the primary IEP goal and the outcome, and having IL as the primary goal moderated the relationship between parental expectations and the outcome.

Chapter V

Discussion

The literature review suggested that students with disabilities generally achieve lower rates of living independently in the community than those without disabilities. The factors associated with increased numbers of living independently in the community remain largely unknown. This study identified: a) individual characteristics, family, and school predictors associated with independent living, and b) moderators for these relationships. Along with a discussion of findings and their implications, limitations and recommendations for future search and practice are also included in this chapter

5.1 Key Findings

The first set of factors that will be discussed is **individual characteristics**. The factors identified as predictors in this category were ethnicity, disability label, and gender. Findings regarding ethnicity supported extant research in that African American and Hispanic minorities are less likely to live independently after school (Williams-Diehm & Benz, 2008). Especially African Americans, as a group, had lower odds of living independently than any other ethnic category. These findings on ethnicity alone cannot warrant increased services for a specific category, because ethnicity is intertwined with other socioeconomic domains (Skiba et al., 2005). However, they do suggest the need for service professionals to use cultural sensitivity when working with culturally diverse students and families. This includes finding ways to communicate effectively with families regarding the student's future and services available, and

also increasing leadership in diverse students, which other findings of this study suggest is an important practice.

Previous research suggested that people with two disability categories are less likely to live independently: those with Autism Spectrum Disorders (ASD) and Multiple Disabilities (MD). Findings from this study suggest that those who received the label of Autism have lower odds of living independently compared to any other category. Previous research identified a series of needs that are more prevalent or unique in this population, such as a continuum of living supports, and supports to increase self-help skills and decrease challenging behaviors (Wehman et al., 2014; Hendricks & Wehman, 2009). This provides strong evidence to support specialized programming that emphasizes planning for postsecondary independent living for the population with an ASD label.

This study also found that women are more likely to live independently than men, which is consistent with extant research. This pattern of women leaving their parental home earlier than men is well documented in the literature for the last few decades (Buck & Scott, 1993; Wagner, 1992; Iacovou, 2010). Literature from the 1990s identify this trend, and the explanations they offer are that women marry earlier than men (Wagner, 1992), and that leaving the parental home earlier was associated with lower socioeconomic status (Buck & Scott, 1993). Iacovou (2011) reports trends for European youth, where the explanation is that women leave parental home at the same time as men, but tend to be younger than their partners, which would explain a few years delay in men. This trend cannot be addressed through services and it is related to postsecondary life exclusively, so no recommendations will be offered in this case.

Although this discussion focuses on factors that are significant predictors, it is also noteworthy in some cases to discuss factors that are not significant. As such, an important

finding is that the family's income level is not a statistically significant factor. Several studies emphasize the connection between ethnicity and poverty (Skiba et al., 2005, Sullivan & Bal, 2013). Interestingly, although ethnicity was a significant predictor, the family's income level is not. The interaction between ethnicity and family's income level as it relates to poverty could have provided more insight into this relationship, but it was not statistically significant. Other research indicates that students growing up in poverty have poorer academic and postsecondary outcomes than those who do not (Hair, Hanson, Wolfe, & Pollak, 2015), but this was not the case with postsecondary living status. A possible explanation is that families who have the means provide housing for their children well into adulthood. Another explanation could be financial supports for financially disadvantaged youth to access affordable housing, and thus move out of the family's residence. Although any or both of these explanations might be true, more research is needed to understand this finding.

Most **skills** included in this study, with the exception of Household Responsibility Skills and Psychological Empowerment were significantly associated with the postsecondary living status. The relationships between functional mental skill and personal autonomy and IL had the expected direction, with increasing scores being associated with living independently. So, interventions focusing on these skills would be likely to increase the capacity for IL in students with disabilities.

The other three relationships with between skills predictors and IL had an unexpected directionality. In the case of Self-Care Skill, Social Skills, and Self-Realization, increasing scores predicted not living independently. The findings regarding social skills and self-realization should be interpreted cautiously, as mentioned in the previous chapter, because data might not be missing at random for these two factors. In light of this, and of the findings being in opposition

86

to extant literature suggesting that high levels of these skills should lead to better postsecondary outcomes, make any interpretation and further implication doubtful. More research is warranted to identify the direction of these relationships using unbiased data.

However, analyses between missing and nonmissing data did not identify any differences in the case of self-care skills, and from the analysis or data presentation standpoint there is no reason to doubt the negative relationship between self-care skills and IL. A possible explanation could be that youth with high scores in self-care skills might still need supports, either as students or adults, to achieve IL, but the high levels of these skills might make them ineligible for services. Hence, future research will need to investigate whether there are confounding factors that weigh substantially more than this skill that lead to IL, or if these persons might have unmet needs because of providers' failure to meet guidelines for services.

The two **family factors** that emerged as good predictors for IL are parental expectations and parental involvement. Increasing **parental expectations** predicted postsecondary living status, with the more confidence parents had that their child will live on their own without supervision, the more likely they were to live independently. This finding has implications for the way service professionals involve parents in the conversation regarding transition planning, with the need to emphasize high expectations for everyone, and also for potential parent trainings to prepare them to be efficient partners in the discussion regarding preparing youth for the transition to adulthood.

General parental involvement in school life, on the other hand, had a negative association with the outcome, with those whose parents were highly engaged being less likely to live independently. This raises the question of which parents become highly engaged in their child's school. Research does not offer an answer to this, and it appears to be an area where more

study is warranted. A check of the distribution of participant answers indicates that most parent participants were "more" or "very" involved in school, for both the students who did and did not live independently. However, with most students in the subpopulation not achieving independent living, the most parents who were involved in school life were in the non-independent category.

Table 15

Parental Involvement X Independent Living

Parental Involvement	Independent Living		
	Yes (N/%)	No (N/%)	Total (N/%)
None	230	80	310
	6.69	5.19	6.24
Little Involvement	560	210	770
	16.45	14.27	15.80
Some Involvement	960	390	1,350
	28.17	26.62	27.71
More Involvement	1,080	500	1,580
	31.53	34.27	32.35
Very Involved	590	290	880
	17.15	19.66	17.90
Total	3,420	1,470	4,890
	100.00	100.00	100.00

Note. Column Percent; all Ns are rounded to the nearest ten (IES Procedure)

Possible explanations for this could be that students with disabilities have lower rates of

IL regardless of their parents' involvement, or that parents who are unhappy with their child's

educational program are more likely to get involved in school activities to gain a sense control by

being a part of the school community. Or perhaps, parents who provide intense supports during

transitional years are more likely to provide support into year adulthood; this support would

translate into continuing to provide a home for their children even after they become adults.

Fingerman and collaborators (2012) found that even in the general population about a third of

parents provide intensive supports to their adult children; this might be the case for parents of

youth with disabilities, or the proportion of those offering intense supports, including a home, to

their children might be higher than for those without disabilities. Future research will need to

investigate of this is true for parents of youth with disabilities.

Two **school factors** emerged as good predictors for IL: student leadership and having IL as the primary IEP goal. Research indicated that having the students take a **leadership role** in their transition planning is associated with better postsecondary outcomes (Rusch et al., 2009; Etscheidt, 2006; Halpern, 2004; also see Ianacome & Kochhar, 1996; Field, 1996). This proved to be also true in the case of IL, where an increase in the level of leadership is associated with a trifold increase in the odds of postsecondary IL. This has a profound implication in how students are trained to participate in their transition planning, and suggests that including opportunities and training for leadership would lead to better IL outcomes for youth.

Having IL as the primary transition goal is a significant predictor. It greatly improves the odds of postsecondary independent living. This provides evidence to support the importance of giving IL consideration during transition planning, and including goals to support students in this domain. Although one of the three areas of postsecondary lives targeted by IDEIA of 2004, postsecondary living status is not one of the domains that are assessed through the State Performance Plans (20 U.S.C. 1416(a)(3)(B)) in either Indicator 13 or 14. Five states include follow-up for living status although not mandated (Gerber, DeArment, & Batalo, 2013), but the rest do not. This has the potential to send teachers a message that if their district is not reporting data on living status, they might not need to plan for independent living, which, considering the high association of planning for IL and the status of living outcome, might be highly detrimental for youth with disabilities. From a policy perspective, this finding emphasizes how important planning for IL is, which should be reflected in the domains included in the State Assessment Plans. Plans should include follow-up for all areas of transition (i.e. postsecondary education, employment, and independent living) in order to emphasize the message that all areas should be

included in transition planning. This initiative will drive the practice to routinely include planning and goals for all transition outcomes.

The findings regarding **moderation** were able to explain some of the main effects for certain groups. In terms of individual characteristics, ethnicity was a significant moderator for mental skill, self-care skill, parental expectations, and parental involvement.

Findings regarding skills indicated that increasing mental skills scores were positively associated with IL for African American students, but not so for Hispanics and that increasing self-care skills were negatively associated with the outcome for African Americans, but positive for Others. There is no previous research on the relationship between skills and ethnicity as they relate to IL, but based on the results on this study it appears that scoring high in mental skills is more important than having better self-care skills for African Americans on their path to achieving IL. It might be that for African American youth being able to live independently is more a matter of having mental skills that could lead to employment than having the skills to live independently, but for Others, who generally perform better in IL than the all the other groups, it is a matter of having the self-care skills to manage living on their own.

Interactions with family factors revealed that increased parental expectations were positively associated with IL for all students, and more so for Whites, and less so for Hispanics. The fact that parental expectations for independence are more relevant for White students confirms previous research, which found that White families are more likely to plan and think about IL than cultural minorities (Zhang et al., 2010). The second family factor, parental involvement, had a negative association with the outcome for all ethnic groups, had a more pronounced negative association for the Other students. It might be that families in the Other category are more likely to get involved in their child's school life if they are worried about their

91

child's future prospects, or are unhappy with the education their child receives, both of which having the potential to lead to low IL achievement.

Disability label was a significant moderator for parental expectations, mental skill, and self-care skill. The result for the interaction with parental expectations was that although increasing parental expectations were associated with living independently, that association is stronger for students with ASD than those with ID, ED, OI, and LD. A possible explanation might be that parents of students with ASD have overall lower expectations for their child and when they do expect them to live independently it is because the youth is better prepared to do so.

The result of the interaction with mental skill followed the same pattern as for parental expectations, but with more accentuated differences. Although for all students with disabilities mental skill was positively associated with IL, the association is strongest for the ASD category, and less strong for ED, OI, and MD. Moreover, the relationship is negatively associated with ID, Visual Impairment, OHI, and Deaf/Blindness. So, higher mental skill scores are more strongly associated with IL for students with ASD than with any other label. A possible explanation might be that mental skills are associated with employment skills, and employment is more essential in youth with ASD attainment of IL than other categories.

The result of the interaction with self-care skill revealed the same pattern in the significant interactions: the relationship with self-care skill was negatively associated with IL for all students, and the direction maintained when the relationship was mediated by disability label. The only difference was that in the case of students with Speech Impairment, higher self-care skills were even more negatively associated with IL. A possible explanation is that the mechanism of achieving IL for youth with Speech Impairment is different than for those with

other disabilities, and is not related to how well a student is prepared to live on his/her own. Alternatively, it might be related to social skills or ability to communicate effectively.

The interaction with skills yielded four significant relationships. In the first interaction, which was mental skill and social skill, increasing mental skill scores decreased the negative association between social skills and IL, but not to the point of reversing it. This finding might be biased by non-randomly missing data. If the result was true, however, the implication is that interventions that increase mental skills in students can slightly improve their odds of living independently, regardless of the effect of other skills present.

The second interaction in this set is the one between mental skill and a student's role in transition planning. The result of this interaction was surprising, with higher mental skills slightly decreasing the strong, positive association between a student's role and living independently. It might be that students with high mental skills needs less supports, therefore it is less important for them to a strong, well designed transition plan. In any case, this finding warrants further research into under which conditions would high mental skill scores be detrimental when a student has a leadership role and if students with high mental skills achieve good postsecondary independent living results with fewer supports.

The next interaction is between social skills and parental expectations. High parental expectations slightly reduce the negative association between social skills and IL. Although the effect is not large, it is worth noting that interventions improving parental expectations could help improve students' outcomes in IL. Interpretation of this result should also hold into account the potentially biased missing data in the social skills factor, which could potentially alter this relationship.

The last of the four interactions in the skills category is the most puzzling. The interaction between personal autonomy and having IL as a primary goal results in a slight decrease in two positively associated relationships with the IL outcome. This raises the question of what other confounding factors mediate the relationship between having high personal autonomy, having IL as a primary goal, and IL. It might be linked to certain student or program characteristics, but previous research does not offer the foundation on which to establish an explanation. Further study is needed to understand this relationship.

The skills set of factors also yielded interesting non-significant results. The three self-determination constructs were not moderators for the student's role in transition planning, so engaging in leadership in transition planning might use a different mechanism than acquiring increased self-determination skills. It might be the case that leadership in transition planning requires training in transition options, rather than in general self-determination.

The last set of factors is the school factors, and there is only one significant interaction here, between having IL as a primary goal and parental expectations. Those students whose parents have high expectations they would live independently and who have IL as the primary IEP goal have less odds of living independently than those who do not have IL as the primary goal. This is another puzzling finding, where both primary goal and parental expectations are positively associated with IL, but their interaction decreases their effect on the outcome. There is no support in the literature that could explain this phenomenon, and more research is warranted to determine what confounding factors intervene in this triad of factors (goal, expectations, and IL).

5.2 Limitations

   This study was based on secondary data, so the analyses and understanding of results are limited by the variables collected and student attrition. While findings identified several factors and combinations of factors that are associated with IL, in many cases it is not clear how the factors are related and why there are two seemingly contradictory results.

   The factors selected were also those that have been identified in the literature as associated with either postsecondary outcomes in general, or specifically independent living. There might be other factors that are relevant for IL, but do not yet have a sufficient research base, and were not included.

   In addition to general limitations that result from using secondary data for analyses, there are also limitations that result from the factors chosen. In the case of social and self-care skills, data might be biased by non-random missingness, or the differences identified between the two missing and non-missing data might be due to chance. All the findings related to these two factors were cautiously interpreted, but further research is needed to understand if their relationship to IL is true or biased by missingness. Even for the factors where there is no difference between the missing and non-missing groups, high percentages of attrition might indicate a potential bias in these factors. The factors with high numbers of missing data are in the self-determination constructs and school program survey factors, which might suggest potential issues with collecting these variables. Individual and family factors have low rates of missingness, so this might be an indication that interviews with parents and students are more effective ways of collecting data than direct assessments or using school or district archival documents.

5.3 Implications for Future Research

This study raised many questions regarding potential explanations for some of the findings. A non-significant individual characteristic was family's income level, measured as below or above poverty. The author tried to offer some alternative answers as to why income level, unlike ethnicity, is not significantly associated with IL. More research should elucidate the relationship between income and IL.

The findings that certain skills, such as self-care, social, and self realization are associated with lower odds of living independently was also surprising and potentially biased, so the relationship between these factors and the IL outcomes should be further investigated to understand whether the relationships identified are due to missingness bias or true patterns in the data. Also, it would be useful to see the effect of these skills in relation to other individual and program characteristics that were not used in this study to understand the overall connection between teachable skills and IL. In light of results suggesting that high mental skills are more associated with IL for African Americans and students with ASD, future research should identify whether higher mental skills are indeed associated with postsecondary employment, and if postsecondary employment could be a moderator for achieving IL.

Future research should also investigate the reasons for which general parental involvement in school was associated with lower odds of IL. Part of understanding this connection is knowing which student and parent characteristics contribute to parental involvement, and also understanding the experiences of families who do engage in their children's school. It is possible that parental involvement is regarded as contributing to either more socialization opportunities or more effective educational programming, but that is a hypothesis to be tested in future research. It would also be useful to understand the connection

96

between involvement and culture, and investigate the reasons why the interactions between involvement and ethnicity identified a more pronounced negative association between involvement and IL for Other students, or whether this relationship is true or the result of a small number of participants in the Other category.

Another interesting finding was that the interaction between mental skills and a student's role in transition planning slightly decreasing the main effect of two positive relationships. Future research should further investigate this relationship to identify the conditions under which this phenomenon takes place and whether it is connected to any third factor.

A puzzling finding was that the interaction between personal autonomy and having IL as the primary goal resulted in a small decrease in two positively associated main effects. Since there is no reason to believe the interaction could be biased, future research should study this relationship to identify any confounding factors that might intervene in the interaction.

Self-determination is conceptually connected with leadership, and it is surprising that the three self-determination skills were not moderators for the relationship between leadership and IL. Future research should investigate the mechanism through which a student takes leadership in transition planning and if this is connected with student characteristics such as self-determination or teacher/program characteristics.

Lastly, future research should also investigate the relationship between having IL as a primary goal, parental expectations, and IL. Findings revealed that students who had IL as a goal and whose parents had high expectations for independence had fewer odds of living independently than each main effect would suggest. The literature does not offer any support for suppositions, so this relationship needs to be better understood in order to have a good picture of factors needed for successful transition to IL and moderating effects.

5.4 Implications for Policy

This study identified a series of predictors and moderators for postsecondary IL. From a policy standpoint it is important to note that IL can be planned for and there are factors with the potential to increase a student's odds of having a choice on where to live after finishing high school. Therefore, policymakers should consider the ways planning for IL could be included in requirements for transition planning.

One important step policymakers could take is to provide follow-up for a person's postsecondary living status and satisfaction with that arrangement. This follow-up should be mandated for all states, and come aligned with IDEA's three main outcomes targeted: employment, postsecondary education, and IL. States that currently collect this information could provide a model for questions that can be employed, and this model could be further implemented to get a better understanding of what is effective in terms of all transition outcomes at a national level.

5.5 Implications for Practice

This study identified several practices that have the potential to increase a student's ability to live independently. One of these practices is employing culturally appropriate approaches in transition planning, especially in the case of African American students. Another is providing special programming to students with ASD, with an increased emphasis on increasing functional mental skills and including a component that addresses parental expectations. Although this study suggests that mental skills are more essential for students with ASD, these skills also have the power to moderate the negative effects of other factors, so training in functional mental skills should be included in transition program for all programs.

Other skills to be included in transition training are personal autonomy and leadership during transition planning. Transition professionals should include training for IL as the primary goal in the IEP, and specifically offer supports for it. Any transition intervention should also include a parental training that focuses on increasing parental expectations, keeping the cultural sensitivity aspect in mind.

In addition to developing an intervention for students that encompasses these factors, researchers and practitioners should look first at incorporating this knowledge in teacher preparation programs that focus on secondary special education. The predictors and moderators identified offer a data point in developing evidence-based practices, and the main items that can be incorporated at this time in teacher preparation are: a) approaches to transition should be culturally relevant, b) provide supports in transition to IL for the disability labels that have substantiated needs in specific areas, c) target the skills identified as relevant for IL in daily instruction, d) provide supports for parents to gather knowledge that increases confidence in their children's ability to live independently, e) help students develop leadership in transition planning, and f) specifically plan for postsecondary IL during transition planning. These recommendations are made based on factors that were identified as good predictors or moderators and findings are aligned with stand literature. There are several other relationships that require further research before any recommendations can be made.

5.6 Conclusion

This study was performed as the result of gaps in the literature in the area of transition to IL. Its findings identify individual, skills, family, and school factors that predict postsecondary living status and moderators of the relationships between predictors and postsecondary living status. Specifically, results indicated the following factors as predicting postsecondary living

status: individual factors (ethnicity and disability label), skills (self-care, functional mental, personal autonomy, self-realization, and social), family factors (parental expectations and parental involvement in school), and school factors (student's role in transition planning and having IL as the primary IEP goal). The following factors also emerged as moderators: ethnicity, disability label, mental skills, social skills, personal autonomy, and having IL as the primary goal. Performing analyses on secondary data, although providing the advantage of large numbers of participants, also result in limitations that were considered when making recommendations. Future research should investigate the accuracy of findings regarding skills predictors, and probe for better understanding of decision making during transition planning and participants' experiences. Policy should include transition planning specifically for IL and postsecondary follow-up for this outcome, while practice should focus on incorporating planning for IL during transition planning, addressing cultural diversity in transition, and helping parents develop high and realistic expectations for their children.

List of References

Agresti, A. (2013). *Categorical Data Analysis*. John Wiley and Sons.

Alberto, P. A., Cihak, D. F., & Gama, R. I. (2005). Use of static picture prompts versus video modeling during simulation instruction. *Research in developmental disabilities*, *26*(4), 327-339.

Alwell, M., & Cobb, B. (2009). Functional life skills curricular interventions for youth with disabilities: A systematic review. *Career Development for Exceptional Individuals*.

Americans With Disabilities Act of 1990, Pub. L. No. 101-336, 104 Stat. 328 (1990).

Anderson, K. A., Shattuck, P. T., Cooper, B. P., Roux, A. M., & Wagner, M. (2014). Prevalence and correlates of postsecondary residential status among young adults with an autism spectrum disorder. *Autism*, *18*(5), 562-570.

Ayres, K. M., Langone, J., Boon, R. T., & Norman, A. (2006). Computer-based instruction for purchasing skills. *Education and Training in Developmental Disabilities*, *41*(3), 253-263.

Ayres, K. M., Lowrey, K. A., Douglas, K. H., & Sievers, C. (2011). I can identify Saturn but I can't brush my teeth: What happens when the curricular focus for students with severe disabilities shifts. *Education and Training in Autism and Developmental Disabilities*, *46*(1), 11-21.

Ayres, K. M., Lowrey, K. A., Douglas, K. H., & Sievers, C. (2012). The question still remains: What happens when the curricular focus for students with severe disabilities shifts? A reply to Courtade, Spooner, Browder, and Jimenez (2012). *Education and Training in*

Autism and Developmental Disabilities, *47*(1), 14-22.

Ayres, K. M., Maguire, A., & McClimon, D. (2009). Acquisition and generalization of chained

tasks taught with computer based video instruction to children with autism. *Education*

and Training in Developmental Disabilities, *44*(4), 493-508.

Ayres, K., & Cihak, D. (2010). Computer-and video-based instruction of food-preparation skills:

Acquisition, generalization, and maintenance. *Intellectual and Developmental*

Disabilities, *48*(3), 195-208.

Baglieri, S., Valle, J. W., Connor, D. J., & Gallagher, D. J. (2011). Disability studies in

education: The need for a plurality of perspectives on disability. *Remedial and Special*

Education, 32(4), 267-278.

Banda, D. R., Dogoe, M. S., & Matuszny, R. M. (2011). Review of video prompting studies with

persons with developmental disabilities. *Education and Training in Autism and*

Developmental Disabilities, *46*(4), 514-527.

Bekemeier, K. (2009). *The Relationship between Self-Determination and Quality of Life among*

Individuals with Disabilities Involved with a Center for Independent Living. ProQuest,

Michigan State University

Blanck, P., & Martinis, J. G. (2015). "The right to make choices": The national resource center

for supported decision-making. *Inclusion*, *3*(1), 24-33.

Bouck, E. C. (2010). Reports of life skills training for students with intellectual disabilities in

and out of school. *Journal of Intellectual Disability Research*, *54*(12), 1093-1103.

Bouck, E. C. (2012). Secondary students with moderate/severe intellectual disability:

Considerations of curriculum and post-school outcomes from the National Longitudinal

Transition Study-2. *Journal of Intellectual Disability Research*, *56*(12), 1175-1186.

Bouck, E. C. (2014). The postschool outcomes of students with mild intellectual disability: does it get better with time?. *Journal of Intellectual Disability Research*, *58*(6), 534-548.

Bouck, E. C., & Flanagan, S. M. (2010). Functional curriculum= evidence-based education?: Considering secondary students with mild intellectual disabilities. *Education and Training in Autism and Developmental Disabilities*, *45*(4), 487-499.

Braddock, D., Hemp, R., Rizzolo, M.C., Tanis, E.S., Haffer, L., & Wu, J. (2015). *The State of the States in Intellectual and Developmental Disabilities: Emerging from the Great Recession.* Washington, DC: American Association on Intellectual and Developmental Disabilities (AAIDD)

Braddock, D., Hemp, R., Rizzolo, M.C., Tanis, E.S., Haffer, L., Lulinski, A., & Wu, J. (2013). *The State of the States in Developmental Disabilities 2013*: *The Great Recession and Its Aftermath* (Preliminary Edition). Boulder: Department of Psychiatry and Coleman Institute, University of Colorado and Department of Disability and Human Development, University of Illinois at Chicago.

Brault, M. W. (2012). Americans with Disabilities: 2010 Current Population Reports. *US Census Bureau*, retrieved from http://www.census.gov/prod/2012pubs/p70-131.pdf

Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American psychologist*, *34*(10), 844.

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Sage.

Buck, N., & Scott, J. (1993). She's leaving home: But why? An analysis of young people leaving the parental home. *Journal of Marriage and the Family*, *55*(4), 863-874.

Bursac, Z., Gauss, C. H., Williams, D. K., & Hosmer, D. W. (2008). Purposeful selection of variables in logistic regression. *Source code for biology and medicine*, *3*(1), 17.

Cannella-Malone, H., Sigafoos, J., O'Reilly, M., de la Cruz, B., Edrisinha, C., & Lancioni, G. E. (2006). Comparing video prompting to video modeling for teaching daily living skills to six adults with developmental disabilities. *Education and Training in Developmental Disabilities*, *41*(4), 344-356.

Carran, D., Kerins, M., & Murray, S. (2005). Three-year outcomes for positively and negatively discharged EBD students from nonpublic special education facilities. *Behavioral Disorders*, *30*(2), 119-134.

Certo, N. J., Luecking, R. G., Murphy, S., Brown, L., Courey, S., & Belanger, D. (2008). Seamless transition and long-term support for individuals with severe intellectual disabilities. *Research and practice for Persons with Severe Disabilities*, *33*(3), 85-95.

Chambers, C. R., Hughes, C., & Carter, E. W. (2004). Parent and sibling perspectives on the transition to adulthood. *Education and Training in Developmental Disabilities*, *39*(2), 79-94.

Chambers, D., Rabren, K., & Dunn, C. (2009). A comparison of transition from high school to adult life of students with and without disabilities. *Career Development for Exceptional Individuals*, *32*(1), 42-52.

Chiang, H. M., Cheung, Y. K., Li, H., & Tsai, L. Y. (2013). Factors associated with participation in employment for high school leavers with autism. *Journal of Autism and Developmental Disorders*, *43*(8), 1832-1842.

Chinn, S. (2000). A simple method for converting an odds ratio to effect size for use in meta-analysis. *Statistics in medicine*, *19*(22), 3127-3131.

Cihak, D., Alberto, P. A., Taber-Doughty, T., & Gama, R. I. (2006). A comparison of static picture prompting and video prompting simulation strategies using group instructional procedures. *Focus on Autism and Other Developmental Disabilities*, *21*(2), 89-99.

Clegg, J., Murphy, E., Almack, K., & Harvey, A. (2008). Tensions around inclusion: Reframing the moral horizon. *Journal of Applied Research in Intellectual Disabilities*, *21*(1), 81-94.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis*. Pearson.

Cronin, M. E. (1996). Life skills curricula for students with learning disabilities: A review of the literature. *Journal of Learning Disabilities*, *29*(1), 53-68.

Davies, D. K., Stock, S. E., & Wehmeyer, M. L. (2003). Application of computer simulation to teach ATM access to individuals with intellectual disabilities. *Education and Training in Developmental Disabilities*, *38*(4), 451-456.

Davies, D. K., Stock, S. E., & Wehmeyer, M. L. (2003). Application of computer simulation to teach ATM access to individuals with intellectual disabilities. *Education and Training in Developmental Disabilities*, *38*(4), 451-456.

Deci, E. L., & Ryan, R. M. (1994). Promoting self-determined education. *Scandinavian journal of educational research*, *38*(1), 3-14.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, *11*(4), 227-268.

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. University Rochester Press.

Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. *The Oxford handbook of human motivation*, 85-107.

DiPipi-Hoy, C., & Jitendra, A. (2004). A parent-delivered intervention to teach purchasing skills to young adults with disabilities. *The Journal of Special Education*, *38*(3), 144-157.

Docherty, J., & Reid, K. (2009). 'What's the next stage?' Mothers of young adults with Down syndrome explore the path to independence: a qualitative investigation. *Journal of Applied Research in Intellectual Disabilities*, *22*(5), 458-467.

Dolan, R. P., Hall, T. E., Banerjee, M., Chun, E., & Strangman, N. (2005). Applying principles of universal design to test delivery: e effect of computer-based read-aloud on test performance of high school students with learning disabilities. *Journal of Technology, Learning, and Assessment, 3*(7), 4-29. Available from http://www.jtla.org

Dollar, C. A., Fredrick, L. D., Alberto, P. A., & Luke, J. K. (2012). Using simultaneous prompting to teach independent living and leisure skills to adults with severe intellectual disabilities. *Research in Developmental Disabilities*, *33*(1), 189-195.

Doren, B., Gau, J. M., & Lindstrom, L. E. (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children*, *79*(1), 7-23.

Dowrick, M. K. (2004). Learning outcomes for students of school leaving age in special schools: a preliminary study of stakeholders' perceptions. *Journal of Intellectual and Developmental Disability*, *29*(4), 293-305.

Dyke, P., Bourke, J., Llewellyn, G., & Leonard, H. (2013). The experiences of mothers of young adults with an intellectual disability transitioning from secondary school to adult life. *Journal of Intellectual and Developmental Disability*, *38*(2), 149-162.

Ee, J., & Soh, K. C. (2005). Teacher perceptions on what a functional curriculum should be for children with special needs. International Journal of Special Education, 20(2), 6-18.

Enders, C. K. (2010). *Applied Missing Data Analysis*. Guilford Press

Esbensen, A. J., Bishop, S., Seltzer, M. M., Greenberg, J. S., & Taylor, J. L. (2010).

Comparisons between individuals with autism spectrum disorders and individuals with

Down syndrome in adulthood. *American Journal on Intellectual and Developmental*

Disabilities, *115*(4), 277-290.

Etscheidt, S. (2006). Issues in Transition Planning Legal Decisions. *Career Development for*

Exceptional Individuals, *29*(1), 28-47.

Facts from OSEP's National Longitudinal Studies: The self-determination of youth with

disabilities (June 2005). Menlo Park, CA: SRI International. Available at

www.nlts2.org/fact_sheets/nlts2_fact_sheet_2005_06-2.pdf.

Farmer, C. (2012). Demystifying moderators and mediators in intellectual and developmental

disabilities research: A primer and review of the literature. *Journal of Intellectual*

Disability Research, *56*(12), 1148-1160.

Fernald, W. (1919). After-care study of the patients discharged from Waverly for a period of

twenty-five years upgraded. *American Journal of Mental Deficiency*, *4*, 62-81.

Fingerman, K. L., Cheng, Y. P., Wesselmann, E. D., Zarit, S., Furstenberg, F., & Birditt, K. S.

(2012). Helicopter parents and landing pad kids: Intense parental support of grown

children. *Journal of Marriage and Family*, *74*(4), 880-896.

Fleischer, D. Z., Zames, F. D., & Zames, F. (2012). *The disability rights movement: From*

charity to confrontation. Temple University Press.

Flexer, R. W., Daviso III, A. W., Baer, R. M., McMahan Queen, R., & Meindl, R. S. (2011). An

epidemiological model of transition and postschool outcomes. *Career Development for*

Exceptional Individuals, *34*(2), 83-94.

Garate, T. (2010). *Factors Related to Post-School Outcomes of Minority Youth with Disabilities*. ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

Gardner, J. F., & Carran, D. T. (2005). Attainment of personal outcomes by people with developmental disabilities. *Mental Retardation*, *43*(3), 157-174.

Gerber, P. J., De Arment, S. T., & Batalo, C. G. (2013). A content analysis of state collection: protocols for measuring post-school outcomes for students with learning disabilities. *Learning Disabilities: A Multidisciplinary Journal*, *20*(2), 133-142.

Glen, K. B. (2015). Supported decision-making and the human right of legal capacity. *Inclusion*, *3*(1), 2-16.

Golden, T. P., Bruyere, S. M., Karpur, A., Nazarov, Z., VanLooy, S., & Reiter, B. (2012). Workforce Development Policy: Unrealized Potential for Americans with Disabilities. *Rehabilitation Education, 26*(1), 5-18.

Goodman, J. I., Hazelkorn, M., Bucholz, J. L., Duffy, M. L., & Kitta, Y. (2011). Inclusion and graduation rates: What are the outcomes? *Journal of Disability Policy Studies*, *21*, 241–252. doi:10.1177/1044207310394449

Gottlieb A., Myhill W.N., Blanck P. (2013). Employment of People with Disabilities. In: JH Stone, M Blouin, editors. International Encyclopedia of Rehabilitation. Available online: http://cirrie.buffalo.edu/encyclopedia/en/article/123/

Graves, T. B., Collins, B. C., Schuster, J. W., & Kleinert, H. (2005). Using video prompting to teach cooking skills to secondary students with moderate disabilities. *Education and Training in Developmental Disabilities*, 34-46.

Gray, K. M., Piccinin, A., Keating, C. M., Taffe, J., Parmenter, T. R., Hofer, S., ... & Tonge, B. J. (2014). Outcomes in young adulthood: are we achieving community participation and inclusion?. *Journal of Intellectual Disability Research*, *58*(8), 734-745.

Gumpel, T. P., Tappe, P., & Araki, C. (2000). Comparison of social problem-solving abilities among adults with and without developmental disabilities. *Education and Training in Mental Retardation and Developmental Disabilities*, 259-268.

Gumpel, T., & Nativ-Ari-Am, H. (2001). Evaluation of a technology for teaching complex social skills to young adults with visual and cognitive impairments. *Journal of Visual Impairment & Blindness*, *95*(2), 95-107.

Haber, M. G., Mazzotti, V. L., Mustian, A. L., Rowe, D. A., Bartholomew, A. L., Test, D. W., & Fowler, C. H. (2015). What works, when, for whom, and with whom a meta-analytic review of predictors of postsecondary success for students with disabilities. *Review of Educational Research*, 0034654315583135.

Hair, N. L., Hanson, J. L., Wolfe, B. L., & Pollak, S. D. (2015). Association of child poverty, brain development, and academic achievement. *Journal of the American Medical Association Pediatrics*, *169*(9), 822-829.

Halpern, A. S. (1994). Quality of life for students with disabilities in transition from school to adulthood. In *Improving the Quality of Life* (pp. 193-236). Springer Netherlands.

Hansen, D. L., & Morgan, R. L. (2008). Teaching grocery store purchasing skills to students with intellectual disabilities using a computer-based instruction program. *Education and Training in Developmental Disabilities*, *43*(4), 431-442.

Harry, B., Klingner, J. K., & Hart, J. (2005). African American families under fire ethnographic views of family strengths. *Remedial and special education*, *26*(2), 101-112.

Hayden, M. F., Kim, S. H., & DePaepe, P. (2005). Health status, utilization patterns, and outcomes of persons with intellectual disabilities: review of the literature. *Mental Retardation*, *43*(3), 175-195.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Heal, L. W., & Rusch, F. R. (1994). Prediction of residential independence of special education high school students. *Research in Developmental Disabilities*, *15*(3), 223-243.

Heal, L. W., Khoju, M., & Rusch, F. R. (1997). Predicting quality of life of youths after they leave special education high school programs. *The Journal of Special Education*, *31*(3), 279-299.

Heal, L. W., Rubin, S. S., & Rusch, F. R. (1998). Residential independence of former special education high school students: A second look. *Research in developmental disabilities*, *19*(1), 1-26.

Hendricks, D. R., & Wehman, P. (2009). Transition from school to adulthood for youth with autism spectrum disorders: Review and recommendations. *Focus on Autism and Other Developmental Disabilities*, *24*(2), 77-88

Henninger, N. A., & Taylor, J. L. (2014). Family perspectives on a successful transition to adulthood for individuals with disabilities. *Mental Retardation*, *52*(2), 98-111.

Hill, P. D. (2010). *An Examination of the Impact of the IEP Team Composition and Transition Planning Upon the Success of Students with Disabilities in Urban Districts* (Doctoral dissertation, Bowling Green State University).

Hodgson A., & Spours, K. (2015). An ecological analysis of the dynamics of localities: a 14+ low opportunity progression equilibrium in action. Journal of Education and Work, 28(1).

Horn, J. A., Miltenberger, R. G., Weil, T., Mowery, J., Conn, M., & Sams, L. (2008). Teaching

    laundry skills to individuals with developmental disabilities using video prompting.

    International Journal of Behavioral Consultation and Therapy, *4*(3), 279.

Hosmer Jr, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (Vol.

    398). John Wiley & Sons.

Hughes, C. (2008). Postsecondary Outcomes in the 21st Century—A Change is Gonna Come?.

    Research and Practice for Persons with Severe Disabilities, *33*(3), 100-102.

Hustyi, K. M., Hall, S. S., Quintin, E. M., Chromik, L. C., Lightbody, A. A., & Reiss, A. L.

    (2015). The Relationship Between Autistic Symptomatology and Independent Living

    Skills in Adolescents and Young Adults with Fragile X Syndrome. *Journal of autism and*

    developmental disorders, *45*(6), 1836-1844.

Hutcherson, K., Langone, J., Ayres, K., & Clees, T. (2004). Computer assisted instruction to

    teach item selection in grocery stores: An assessment of acquisition and generalization.

    Journal of Special Education Technology, *19*(4), 33-42.

Iacovou, M. (2010). Leaving home: Independence, togetherness and income. *Advances in life*

    course research, *15*(4), 147-160.

Ianacone, B. P. (1976). Historical overview: from charity to rights. *Temp. LQ*, *50*, 953.

Ianacone, R. N., & Kochhar, C. A. (1996). Great expectations: Perspectives on transition policy

    and practice in the context of social change. *Career Development for Exceptional*

    Individuals, *19*(2), 177-200.

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004)

Irvine, A., & Lupart, J. (2006). Social Supports in Inclusive Settings: An Essential Component to

    Community Living. *Developmental Disabilities Bulletin*, *34*, 107-126.

Isaacson, N. C., Cocks, E., & Netto, J. A. (2014). Launching: The experiences of two young adults with intellectual disability and their families in transition to individual supported living. *Journal of Intellectual and Developmental Disability*, *39*(3), 270-281.

Isakson, C. L., Burghstahler, S., & Arnold, A. (2006). AAC, Employment, and Independent Living: A Success Story. *Assistive Technology Outcomes and Benefits*, *3*(1), 67-79.

Jackson, L. B., Ryndak, D. L., & Wehmeyer, M. L. (2008). The dynamic relationship between context, curriculum, and student learning: A case for inclusive education as a research-based practice. *Research and Practice for Persons with Severe Disabilities*, *34*(1), 175-195.

Janus, A. L. (2009). Disability and the transition to adulthood. *Social forces*, *88*(1), 99-120.

Jobling, A., & Cuskelly, M. (2006). Young people with Down syndrome: A preliminary investigation of health knowledge and associated behaviours. *Journal of Intellectual and Developmental Disability*, *31*(4), 210-218.

Johnson, J. (2011). *Digging Deeper: Enriching Transition to Adult Life Outcome Research through Life-Histories*. ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

Jose, P. E. (2013). *Doing statistical mediation and moderation*. Guilford Press.

Kalyanpur, M., & Harry, B. (2004). Impact of the Social Construction of LD on Culturally Diverse Families A Response to Reid and Valle. *Journal of Learning Disabilities*, *37*(6), 530-533.

Katz, R. F. (2012). *A mentoring volunteer program for Orthodox Jewish adults with disabilities* (Doctoral dissertation, BOSTON UNIVERSITY).

Kim, K.H., & Turnbull, A. (2004). Transition to adulthood for students with severe intellectual disabilities: Shifting toward person-family interdependent planning. *Research & Practice for Persons with Severe Disabilities*, 29, 53-57.

Kochhar-Bryant, C. A. (2007). The summary of performance as transition "passport" to employment and independent living. *Assessment for Effective Intervention*, *32*(3), 160-170.

Kozma, A., Mansell, J., & Beadle-Brown, J. (2009). Outcomes in different residential settings for people with intellectual disability: A systemic review. *American Journal on Intellectual and Developmental Disabilities*, *114*(3), 193-222.

Kraemer, H. C., Kiernan, M., Essex, M., & Kupfer, D. J. (2008). How and why criteria defining moderators and mediators differ between the Baron & Kenny and MacArthur approaches. *Health Psychology*, *27*(2S), S101.

Krauss, M. W., Seltzer, M. M., & Jacobson, H. T. (2005). Adults with autism living at home or in non-family settings: positive and negative aspects of residential status. *Journal of intellectual disability research*, *49*(2), 111-124.

Lakin, K. C., & Stancliffe, R. J. (2007). Residential supports for persons with intellectual and developmental disabilities. *Mental retardation and developmental disabilities research reviews*, *13*(2), 151-159.

Lakin, K. C., Doljanac, R., Byun, S. Y., Stancliffe, R., Taub, S., & Chiri, G. (2008). Choice-making among Medicaid HCBS and ICF/MR recipients in six states. *American Journal on Mental Retardation*, *113*(5), 325-342.

Landmark, L. J., Ju, S., & Zhang, D. (2010). Substantiated best practices in transition: Fifteen plus years later. *Career Development for Exceptional Individuals*.

Lindzey, G., Gilbert, D., & Fiske, S. T. (1998). *The handbook of social psychology*. Oxford University Press.

Lindzey, G., Gilbert, D., & Fiske, S. T. (1998). *The Handbook of Social Psychology: 2-Volume Set*. Oxford University Press.

Lombardi, A., Doren, B., Gau, J. M., & Lindstrom, L. E. (2013). The influence of instructional settings in reading and math on postsecondary participation. *Journal of Disability Policy Studies*, *24*(3), 170-180.

Luftig, R. L., & Muthert, D. (2005). Patterns of employment and independent living of adult graduates with learning disabilities and mental retardation of an inclusionary high school vocational program. *Research in developmental disabilities*, *26*(4), 317-325.

Matson, J. L., Dempsey, T., & Fodstad, J. C. (2009). The effect of autism spectrum disorders on adaptive independent living skills in adults with severe intellectual disability. *Research in developmental disabilities*, *30*(6), 1203-1211.

Mazzotti, V. L., Rowe, D. A., Cameto, R., Test, D. W., & Morningstar, M. E. (2013). Identifying and Promoting Transition Evidence-Based Practices and Predictors of Success: A Position Paper of the Division on Career Development and Transition. *Career Development and Transition for Exceptional Individuals*, *36*(3), 140-151.

Mazzotti, V. L., Rowe, D. A., Sinclair, J., Poppen, M., Woods, W. E., & Shearer, M. L. (2015). Predictors of Post-School Success A Systematic Review of NLTS2 Secondary Analyses. *Career Development and Transition for Exceptional Individuals*, *39*(4), 196-215.

Mazzotti, V. L., Test, D. W., Wood, C. L., & Richter, S. M. (2009). Effects of Computer-Assisted Instruction on Students' Knowledge of Postschool Options. *Career Development for Exceptional Individuals*, *33*(1), 25-40

Mechling, L. C., & Cronin, B. (2006). Computer-based video instruction to teach the use of
augmentative and alternative communication devices for ordering at fast-food restaurants.
The Journal of Special Education, *39*(4), 234-245.

Mechling, L. C., & Gustafson, M. (2009). Comparison of the effects of static picture and video
prompting on completion of cooking related tasks by students with moderate intellectual
disabilities. *Exceptionality*, *17*(2), 103-116.

Mechling, L. C., & Gustafson, M. R. (2008). Comparison of static picture and video prompting
on the performance of cooking-related tasks by students with autism. *Journal of Special
Education Technology*, *23*(3), 31-45.

Mechling, L. C., & Stephens, E. (2009). Comparison of self-prompting of cooking skills via
picture-based cookbooks and video recipes. *Education and Training in Developmental
Disabilities*, 218-236.

Mechling, L. C., Ayres, K. M., Foster, A. L., & Bryant, K. J. (2013). Comparing the effects of
commercially available and custom-made video prompting for teaching cooking skills to
high school students with autism. *Remedial and Special Education*, *34*(6), 371-383.

Mechling, L. C., Gast, D. L., & Fields, E. A. (2008). Evaluation of a portable DVD player and
system of least prompts to self-prompt cooking task completion by young adults with
moderate intellectual disabilities. *The Journal of Special Education*, *42*(3), 179-190.

Mechling, L. C., Gast, D. L., & Seid, N. H. (2009). Using a personal digital assistant to increase
independent task completion by students with autism spectrum disorder. *Journal of
autism and developmental disorders*, *39*(10), 1420-1434.

Mechling, L. C., Gast, D. L., & Seid, N. H. (2010). Evaluation of a personal digital assistant as a
self-prompting device for increasing multi-step task completion by students with

moderate intellectual disabilities. *Education and Training in Autism and Developmental Disabilities*, 422-439.

Mechling, L., & O'Brien, E. (2010). Computer-based video instruction to teach students with intellectual disabilities to use public bus transportation. *Education and Training in Autism and Developmental Disabilities*, *45*(2), 230-241.

Milsom, A., & Glanville, J. L. (2010). Factors mediating the relationship between social skills and academic grades in a sample of students diagnosed with learning disabilities or emotional disturbance. *Remedial and Special Education*, *31*(4), 241-251.

Munoz-Lorenzo, O. (2012). *A qualitative study of characteristics, competencies, and strategies of transition staff working with urban latino/A youth with disabilities* (Doctoral dissertation, University of Maryland, College Park).

Murzynski, N. T., & Bourret, J. C. (2007). Combining video modeling and least-to-most prompting for establishing response chains. *Behavioral Interventions*, *22*(2), 147-152.

Myklebust, J. O., & Båtevik, F. O. (2014). Economic independence among former students with special educational needs: changes and continuities from their late twenties to their mid-thirties. *European Journal of Special Needs Education*, *29*(3), 387-401.

Newman, L., Wagner, M., Cameto, R., & Knokey, A. M. (2009). The Post-High School Outcomes of Youth With Disabilities up to 4 Years After High School: A Report From the National Longitudinal Transition Study-2 (NLTS2). NCSER 2009-3017. *National Center for Special Education Research*.

Newman, L., Wagner, M., Cameto, R., Knokey, A. M., & Shaver, D. (2010). Comparisons across Time of the Outcomes of Youth with Disabilities up to 4 Years after High School. A Report of Findings from the National Longitudinal Transition Study (NLTS) and the

National Longitudinal Transition Study-2 (NLTS2). NCSER 2010-3008. *National Center for Special Education Research*.

Newman, L., Wagner, M., Huang, T., Shaver, D., Knokey, A. M., Yu, J., ... & Cameto, R. (2011). Secondary School Programs and Performance of Students with Disabilities: A Special Topic Report of Findings from the National Longitudinal Transition Study-2 (NLTS2). NCSER 2012-3000. *National Center for Special Education Research*.

Nord, D., Kang, Y., Ticha, R, Hamre, K., Fay, M., & Mosely, C. (2014). Residential setting and individual outcomes: An assessment of existing National Core Indicators research. *Policy Research Brief,* 24(*3*), Minneapolis, MN: Research and Training Center on Community Living at the University of Minnesota.

Oertle, K. M. (2009). *Rehabilitation professionals' participation intensity and expectations of transition roles*. (Doctoral Dissertation, University of Illinois at Urbana-Champaign).

Osborne, J. W. (2008). *Best practices in quantitative methods*. Sage.

Palmer, S. B., Wehmeyer, M. L., Davies, D. K., & Stock, S. E. (2012). Family members' reports of the technology use of family members with intellectual and developmental disabilities. *Journal of Intellectual Disability Research*, *56*(4), 402-414.

Papay, C. K., & Bambara, L. M. (2014). Best practices in transition to adult life for youth with intellectual disabilities. *Career Development and Transition for Exceptional Individuals*, *37*(3), 136-148.

Paul-Constantin, V. (2012). *Transition Directors, Teachers, and Parents Perceptions of a Transition Program for Persons with Disabilities*. ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

Peng, C. Y. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The journal of educational research*, *96*(1), 3-14.

Peterson, L. Y., Van Dycke, J. L., Roberson, R. L., & Sedaghat, J. M. (2013). Promoting student transition from entitlement services to eligibility resources. *Intervention in School and Clinic*, *49*(2), 99-107.

Plotner, A. J. (2009). *Vocational Rehabilitation Professionals' Identified Transition Competencies: Importance, Frequency, and Preparedness*. ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

Powers, L. E., Geenen, S., Powers, J., Pommier-Satya, S., Turner, A., Dalton, L. D., ... & Swank, P. (2012). My Life: Effects of a longitudinal, randomized study of self-determination enhancement on the transition outcomes of youth in foster care and special education. *Children and Youth Services Review*, *34*(11), 2179-2187.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate behavioral research*, *42*(1), 185-227.

Ramdoss, S., Lang, R., Fragale, C., Britt, C., O'Reilly, M., Sigafoos, J., ... & Lancioni, G. E. (2012). Use of computer-based interventions to promote daily living skills in individuals with intellectual disabilities: A systematic review. *Journal of Developmental and Physical Disabilities*, *24*(2), 197-215.

Repetto, J., McGorray, S., Wang, H., Podmostko, M., Andrews, W. D., Lubbers, J., & Gritz, S. (2011). The high school experience: What students with and without disabilities report as they leave school. *Career Development for Exceptional Individuals*, 0885728811414699.

Riffel, L. A., Wehmeyer, M. L., Turnbull, A. P., & Lattimore, J. (2005). Promoting independent

performance of transition-related tasks using a palmtop PC-based self-directed visual and auditory prompting system. *Journal of Special Education Technology*, *20*(2), 5.

Roberts, E. L. (2013). *A self-advocacy training program for students with disabilities: Adult outcomes and advocacy involvement one to six years after participation* (Doctoral dissertation, Texas A&M University).

Robick, C. M. (2010). *A Phenomenological Study: Parent/Guardian and Special Education Student Perceptions of Transition beyond High School*. ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

Rojewski, J. W., Lee, I. H., & Gregg, N. (2015). Causal effects of inclusion on postsecondary education outcomes of individuals with high-incidence disabilities. *Journal of Disability Policy Studies, 25*(4), 210-219.

Ross, J., Marcell, J., Williams, P., & Carlson, D. (2013). Postsecondary Education Employment and Independent Living Outcomes of Persons with Autism and Intellectual Disability. *Journal of Postsecondary Education and Disability*, *26*(4), 337-351.

Rusch, F. R., & Wolfe, P. (2008). When Will Our Values Finally Result in the Creation of New Pathways for Change--Change that We Can Believe In?. *Research and Practice for Persons with Severe Disabilities*, *33*(3), 96-97.

Rusch, F. R., Hughes, C., Agran, M., Martin, J. E., & Johnson, J. R. (2009). Toward self-directed learning, post-high school placement, and coordinated support constructing new transition bridges to adult life. *Career Development for Exceptional Individuals*, *32*(1), 53-59.

Ryndak, D. L., Ward, T., Alper, S., Montgomery, J. W., & Storch, J. F. (2010). Long-term outcomes of services for two persons with significant disabilities with differing

educational experiences: A qualitative consideration of the impact of educational experiences. *Education and Training in Autism and Developmental Disabilities*, *45*(3), 323-338.

Sameroff, A. J., & MacKenzie, M. J. (2003). A Quarter-Century of the Transactional Model: How Have Things Changed?. *Zero to Three (J)*, *24*(1), 14-22.

Sanford, C., Newman, L., Wagner, M., Cameto, R., Knokey, A. M., & Shaver, D. (2011). The Post-High School Outcomes of Young Adults with Disabilities up to 6 Years after High School: Key Findings from the National Longitudinal Transition Study-2 (NLTS2). NCSER 2011-3004. *National Center for Special Education Research*.

Savage, R. C. (2005). The great leap forward: Transitioning into the adult world. *Preventing School Failure: Alternative Education for Children and Youth*, *49*(4), 43-52.

Scanlon, D., Saxon, K., Cowell, M., Kenny, M. E., Pérez-Gualdrón, L., & Jernigan, M. (2008). Urban adolescents' postschool aspirations and awareness. *Remedial and Special Education*, *29*(3), 161-174.

Schreifels, J. M. (2013). *Self-Advocacy from the Perspective of Young Adults with Specific Learning Disabilities During the Transition Process* (Doctoral dissertation, Walden University).

Settersten, R. A. (2003). Age structuring and the rhythm of the life course. *Handbook of the life course*, 81-98.

Sheppard-Jones, K., Prout, H. T., & Kleinert, H. (2005). Quality of life dimensions for adults with developmental disabilities: A comparative study. *Mental Retardation*, *43*(4), 281-291.

Shogren, K. A., & Villarreal, M. G. (2015). Developing student, family, and school constructs

  from NLTS2 data. *The Journal of Special Education*, *49*(2), 89-103.

Shogren, K. A., & Wehmeyer, M. L. (2015). A framework for research and intervention design

  in supported decision-making. *Inclusion*, *3*(1), 17-23.

Shogren, K. A., Bradley, V. J., Gomez, S. C., Yeager, M. H., Schalock, R. L., Borthwick-Duffy,

  S., ... & Luckasson, R. A. (2009). Public policy and the enhancement of desired outcomes

  for persons with intellectual disability. *Intellectual and Developmental Disabilities*,

  47(4), 307-319.

Shogren, K. A., Kennedy, W., Dowsett, C., & Little, T. D. (2014). Autonomy, psychological

  empowerment, and self-realization: Exploring data on self-determination from NLTS2.

  Exceptional Children, *80*(2), 221-235.

Shogren, K. A., Luckasson, R., & Schalock, R. L. (2014). The definition of "context" and its

  application in the field of intellectual disability. *Journal of Policy and practice in*

  Intellectual Disabilities, *11*(2), 109-116.

Shogren, K. A., Villarreal, M. G., Lang, K., & Seo, H. (2016). Mediating Role of Self-

  Determination Constructs in Explaining the Relationship Between School Factors and

  Postschool Outcomes. *Exceptional Children*, *83*(2), 165-180, 0014402916660089.

Shogren, K. A., Wehmeyer, M. L., Palmer, S. B., Rifenbark, G. G., & Little, T. D. (2013).

  Relationships between self-determination and postschool outcomes for youth with

  disabilities. *The Journal of Special Education*, 48(4), 256-267, 0022466913489733.

Shogren, K. A., Wehmeyer, M. L., Palmer, S. B., Rifenbark, G. G., & Little, T. D. (2015).

  Relationships between self-determination and postschool outcomes for youth with

  disabilities. *The Journal of Special Education*, *48*(4), 256-267.

Sigafoos, J., O'Reilly, M., Cannella, H., Edrisinha, C., de la Cruz, B., Upadhyaya, M., ... & Young, D. (2007). Evaluation of a video prompting and fading procedure for teaching dish washing skills to adults with developmental disabilities. *Journal of Behavioral Education*, *16*(2), 93-109.

Sigafoos, J., O'Reilly, M., Cannella, H., Upadhyaya, M., Edrisinha, C., Lancioni, G. E., ... & Young, D. (2005). Computer-presented video prompting for teaching microwave oven use to three adults with developmental disabilities. *Journal of Behavioral Education*, *14*(3), 189-201.

Skiba, R. J., Poloni-Staudinger, L., Simmons, A. B., Renae Feggins-Azziz, L., & Chung, C. G. (2005). Unproven links: Can poverty explain ethnic disproportionality in special education?. *The Journal of Special Education*, *39*(3), 130-144.

Skidmore, K. W. (2014). Assessment to Guide Individualized Transition Plans from School to Post-School for Children Ages 14+ with Moderate Disabilities, ProQuest.

Skinner, B. F. (1930). On the conditions of elicitation of certain eating reflexes. *Proceedings of the national Academy of sciences*, *16*(6), 433-438.

Stainton, T., Brown, J., Crawford, C., Hole, R., & Charles, G. (2011). Comparison of community residential supports on measures of information & planning; access to & delivery of supports; choice & control; community connections; satisfaction; and, overall perception of outcomes. *Journal of Intellectual Disability Research*, *55*(8), 732-745.

Stancliffe, R. J., Lakin, K. C., Larson, S., Engler, J., Taub, S., & Fortune, J. (2011). Choice of living arrangements. *Journal of Intellectual Disability Research*, *55*(8), 746-762.

Stancliffe, R. J., Lakin, K. C., Larson, S., Engler, J., Taub, S., & Fortune, J. (2011). Choice of living arrangements. *Journal of Intellectual Disability Research*, *55*(8), 746-762.

Stoltzfus, J. C. (2011). Logistic regression: a brief primer. *Academic Emergency Medicine*, *18*(10), 1099-1104.

Su, C. Y., Chen, C. C., Wuang, Y. P., Lin, Y. H., & Wu, Y. Y. (2008). Neuropsychological predictors of everyday functioning in adults with intellectual disabilities. *Journal of intellectual disability research*, *52*(1), 18-28.

Sullivan, A. L., & Bal, A. (2013). Disproportionality in special education: Effects of individual and school variables on disability risk. *Exceptional Children*, *79*(4), 475-494.

Sun, C. M. (2007). The impact of inclusion-based education on the likelihood of independence for today's students with special needs. *Journal of Special Education Leadership*, *20*(2), 84-92.

Test, D. W., Fowler, C. H., & Kohler, P. D. (2013). Evidence-based practices and predictors in secondary transition: What we know and what we still need to know (p. 10). Charlotte, NC: National Secondary Transition Technical Assistance Center.

Test, D. W., Smith, L. E., & Carter, E. W. (2014). Equipping youth with autism spectrum disorders for adulthood: Promoting rigor, relevance, and relationships. *Remedial and Special Education*, *35*(2), 80-90.

Thompson, B., Diamond, K. E., McWilliam, R., Snyder, P., & Snyder, S. W. (2005). Evaluating the quality of evidence from correlational research for evidence-based practice. *Exceptional Children*, *71*(2), 181-194.

Thompson, J. R., McGrew, K. S., Johnson, D. R., & Bruininks, R. H. (2000). Refining a multidimensional model of community adjustment through an analysis of postschool follow-up data. *Exceptionality*, *8*(2), 73-99.

Tichá, R., Lakin, K. C., Larson, S. A., Stancliffe, R. J., Taub, S., Engler, J., ... & Moseley, C.

(2012). Correlates of everyday choice and support-related choice for 8,892 randomly sampled adults with intellectual and developmental disabilities in 19 states. *Intellectual and Developmental Disabilities*, *50*(6), 486-504.

Turnbull, H. R., Turnbull, A. P., Wehmeyer, M. L., & Park, J. (2003). A quality of life framework for special education outcomes. *Remedial and Special Education*, *24*(2), 67-74.

Turnbull, R., & Turnbull, A. (2014). Looking Backward and Framing the Future for Parents' Aspirations for Their Children With Disabilities. *Remedial and Special Education*, *36*(1), 52-57.

UCLA Institute for Digital Research in Education (2016), retrieved from http://stats.idre.ucla.edu/stata/faq/how-can-i-check-for-collinearity-in-survey-regression/

United States Department of Labor (2016). Retrieved from http://www.dol.gov/odep/

Uvin, J., Karaaslanli, D., & White, G. (2004). *Evaluation of Massachusetts' public Vocational Rehabilitation program*. Massachusetts Rehabilitation Commission. Retrieved from http://www.mass.gov/eohhs/gov/departments/mrc/vr-reports.html

Van Lange, P. & Rusbult, C. (2012). Interdependence theory. In P. A. Van LangeA. W. Kruglanski & E. T. Higgins *Handbook of theories of social psychology* (Vol. 2, pp. 251-272). London: SAGE Publications Ltd. doi: 10.4135/9781446249222.n39

Vue, G., Hall, T. E., Robinson, K., Ganley, P., Elizalde, E., & Graham, S. (2016). Informing Understanding of Young Students' Writing Challenges and Opportunities: Insights From the Development of a Digital Writing Tool That Supports Students With Learning Disabilities. *Learning Disability Quarterly*, *39*(2), 83-94.

Wagner, M. (1992). What Happens Next? Trends in Postschool Outcomes of Youth with

      Disabilities. The Second Comprehensive Report from the National Longitudinal

      Transition Study of Special Education Students. SRI International.

Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). After High School: A

      First Look at the Postschool Experiences of Youth with Disabilities. A Report from the

      National Longitudinal Transition Study-2 (NLTS2). SRI International. *Online

      submission*.

Wagner, M., Newman, L., D'Amico, R., Jay, E. D., Butler-Nalin, P., Marder, C., et al. (1991).

      Youth with disabilities: How are they doing? Menlo Park, CA: SRI International.

Wehman, P., Schall, C., Carr, S., Targett, P., West, M., & Cifu, G. (2014). Transition from

      school to adulthood for youth with autism spectrum disorder: What we know and what

      we need to know. *Journal of Disability Policy Studies*, *25*(1), 30-40.

Wehmeyer, M. L., & Palmer, S. B. (2003). Adult outcomes for students with cognitive

      disabilities three-years after high school: The impact of self-determination. *Education

      and Training in Developmental Disabilities*, *38*(2), 131-144.

Westling, D. L., & Fox, L., Carter, E. (2014). *Teaching students with severe disabilities*. Prentice

      Hall.

White, G. W., Lloyd Simpson, J., Gonda, C., Ravesloot, C., & Coble, Z. (2010). Moving from

      independence to interdependence: A conceptual model for better understanding

      community participation of centers for independent living consumers. *Journal of

      Disability Policy Studies*, *20*(4), 233-240.

Williams-Diehm, K. L., & Benz, M. R. (2008). Where are they now? Lessons from a single

      district follow-up study. *Journal for Vocational Special Needs Education*, *30*(2), 4-15.

Woolf, S., Woolf, C. M., & Oakland, T. (2010). Adaptive behavior among adults with

intellectual disabilities and its relationship to community independence. *Intellectual and developmental disabilities*, *48*(3), 209-215.

Zhang, D., Landmark, L., Grenwelge, C., & Montoya, L. (2010). Culturally diverse parents'

perspectives on self-determination. *Education and Training in Autism and Developmental Disabilities*, *45*(2), 175-186.

Zionch, A. (2010). Digital simulations: facilitating transition for students with disabilities.

Intervention in School and Clinic. *46*(4), 246–250.

Appendix A

Interventions for Increasing Living Skills

Citation	Population	Age	Theory	Design	Strategy	Skill	Finding
Video Modeling/Visual Supports							
Alberto, Cihak, & Gama, 2004	Modera te ID	11-15	Behaviorism	Single-case, alternating treatment across 8 participants	Static picture prompts and video modeling	Using an ATM to withdraw money and purchasin g two items with a debit card	Both strategies were equally effective in teaching banking skills. All participants increased and maintained skills
Murzynski & Bourett 2007	ASD	8, 9	Behaviorism	Single-case with parallel treatment	Video modeling with least-to-most prompting or least-to-most prompting alone	Folding clothes, making a sandwich, making juice	Both participants mastered the skill. The least-to-most prompting with video modeling was more effective in teaching targeted skills.
Video prompting							
Cannela-Malone et al. 2006	IDD	27-41	Behaviorism	Single-case with multiple probes across subjects with alternating treatment	Video prompting and video modeling delivered on a computer	Putting away groceries, setting a table	All six participants acquired and maintained the skills with video prompting; video modeling was ineffective
Cihak et al. 2006	Modera te ID	11-12	Behaviorism	Single-case with	Video prompting	Withdraw ing	All six participants

127

				adapted alternating treatment	on projector and static pictures	money from ATM and making purchases	acquired either of the two skills and maintained the skills on one follow-up probe with both delivery procedures
Goodson et al. 2007	Moderate ID and ASD	33-6	Behaviorism	Single case, multiple baseline across 4 participants	Video modeling delivered on a computer	Setting the table	One participant mastered skill with video prompting alone, other three needed error correction as well
Graves et al. 2005	Moderate ID	16-30	Behaviorism	Single case, multiple probe across behaviors	Video modeling delivered on VCR and TV	Cooking	All participants mastered 2 or 3 skills
Horn et al. 2008	IDD	17-29	Behaviorism	Single case, multiple baseline across participants	Video modeling	Laundry skills	Two participants mastered skill with video modeling, one with video modeling and least to most prompts
Mechling et al. 2008	Moderate ID	19-22	Behaviorism	Single case, multiple baseline across tasks	Video modeling delivered on DVD player	Cooking	All participants mastered all skills
Mechling et al. 2009	ID and ASD	16-17	Behaviorism	Single case, multiple baseline across tasks	Video modeling delivered on PDA	Cooking	All participants mastered all skills
Mechling & Gustavson 2008	ASD	15-21	Behaviorism	Single case, adapted alternating treatment	Video modeling delivered on portable DVD player	Cooking	Video modeling was more effective than static pictures for all participants
Mechling &	Moderate	18-	Behaviorism	Single case,	Video	Cooking	Video modeling

Gustavson 2009	te ID	22		adapted alternating treatment	modeling delivered on portable DVD player		was more effective than static pictures for all participants
Mechling & Stephen 2009	Moderate ID	19-22	Behaviorism	Single case, adapted alternating treatment	Video modeling delivered on portable DVD player	Cooking	Video modeling was more effective than static pictures for all participants
Sigafoos et al. 2005	Moderate ID	34-36	Behaviorism	Single case, delayed multiple probe A-B-A-follow-up	Video modeling delivered on a computer	Cooking	Two of three participants mastered the skill
Sigafoos et al. 2007	ID and ASD	27-33	Behaviorism	Single case, multiple baseline across 3 participants	Video modeling delivered on a laptop	Dishwashing	All three participants mastered the skill

Computer-delivered instruction

Ayres and Cihak 2010	ID	15	Behaviorism	Single-case with 3 participants	Computer-based first person video instruction	Setting table, making soup and sandwiches	Accuracy increased on all three tasks, and was maintained after 1 and 2 days, but declined at the 6 and 12 week follow-up. Accuracy increased again after intervention delivered again
Ayres et al, 2006	ID	14	Behaviorism	Single-case – multiple probe across four participants	Computer based intervention for purchasing items at the store using a "dollar	Purchasing items at the grocery store	Three of four participants mastered the skill and generalized to the natural environment

129

					plus" strategy		
Mechling et al, 2013	ASD	15-19	Behaviorism	Single-case–adapted alternating treatment across 4 participants	Computer-based first person video instruction with either custom-made and commercially available conditions	Cooking pancakes, instant mash potatoes, and instant oatmeal	Student's performance improved using the custom-made intervention in all but one participant, who reached proficiency using both methods. No follow-up for interventions
Mechling & O'Brien, 2010	Moderate ID	19-20	Behaviorism	Single-case multiple-probe across 3 participants	Computer-based video instruction	Making a stop request	All participants mastered the skill during simulation, but only 2 of 3 generalized the behavior in-vivo; all participants retained the skill at follow-up
Mechling & Cronin, 2006	Moderate and severe ID	17-21	Behaviorism	Single-case with multiple probe across 3 participants	Computer-based video instruction	Using AT device to order at fast food restaurant	2 of 3 participants increased their skill and the third one increased after a second generalization. All participants maintained mastery of skill at follow-up
Hansen & Morgan, 2008	ID	16-17	Behaviorism	Single-case with multiple baseline across 3 participants	Computer-based video modeling and interactive practice sessions	Grocery store purchasing skills	Purchasing skills generalized for all three participants and maintained during follow-up

Hutcherson et al, 2004	Modera te to severe ID	14-16	Behaviorism	Single-case with multiple baseline across 4 participants	Computer-based interactive practice sessions	Selecting items in a grocery store	Skills increased in all four participants
Mazzotti et al, 2010	Mild to modera te ID	16-19	Self-determinatio n	Single-case with multiple baseline across behaviors	Computer-assisted instructio n	Knowing postsecon dary options for IL, employm ent, and education	All four participants met mastery criteria, but the two participants with moderate ID had variable maintenance results
Mechling, Gast, & Seid, 2010	Modera te ID	15-17	Behaviorism	Single-case with multiple probe across 3 participants	Self-promoting PDA procedure to deliver video instructio n	Cook three foods: hamburge r helper, griller ham and cheese sandwich, and individual pizzas	All three participants mastered the steps for the three recipes and maintained the skills during follow-up. Social validity was established for the DVD player over using a PDA or pictures.
Ayres et al., 2009	ASD	7-9	Behaviorism	Single-case with multiple probe across 3 participants	Computer-based video instructio n and simulatio n	Setting the table, making soup, and making a sandwich	All three participants generalized the skill to in-vivo situations and maintained it at follow-up
Computer Simulation							
Davies et al, 2003	ID	25-58	Behaviorism	Within subjects design using a pre-post test	Computer simulatio n	ATM access	Improved skill level in all nine participants in in-vivo situations and skill maintenance
Hutcherson et al, 2004	ID	14-16	Behaviorism	Single-case with multiple probe across	Computer simulatio n: Project SHOP	Selection of items in grocery store	Improved skill level in all four participants in in-vivo situations

| | | | | behaviors and replicated across participants | | | and skill maintenance, with only one participants acquiring the skill |

Interventions delivered in the community

Author/Year	Disability	Age	Theory	Design	Intervention	Skill/Setting	Results
DiPipi-hoy & Jitendra, 2004	Cerebral palsy and LD, moderate ID, and Down Syndrome	16-20	Behaviorism	Single-case with multiple baselines across 3 participating dyads	Constant time delay with parent-delivered instruction	Purchase items in community stores	Student participants increased their skills and maintained them during follow-up. All parents mastered delivering instruction and maintained skill during follow-up
Dollar et al, 2012	Severe ID	24; 62	Behaviorism	Single-case with multiple baselines across tasks and participants	Simultaneous prompting	Using technology (iPod, CD player, DVD player), and folding clothes (t-shirt, pants, underwear)	Both participants increased their skills and maintained skills during follow-up
Gumpel & Nativ-Ari-Am, 2001	Visual and cognitive impairments	17-21	Behaviorism	Single-case with multiple baselines across 4 participants	Task analysis with behaviors performed by experts	Shop for groceries	All 4 participants were able to perform the skill and maintained skills during follow-up
Kingsworth et al, 2014	Physical disability	20-39	Systems approach; Shared management; Social learning;	Follow-up to the program; survey	The Independence Program (formalized curriculu	Life skills for living independently	The results are mixed: participating youth disabilities still lived with their families (61.5%), but felt

			Experiential learning Self-determination		m and a combination of structured group education sessions, one-to-one support, peer mentorship, role-playing, coaching and/or experiential learning opportunities)		the program helped them their general confidence in trying things on their own.
Luftig & Muthert, 2005	Mild ID and SLD	20-25	Ecological	Follow-up to the program; survey	Vocational/Technology Center inclusionary high school which emphasized vocational technology training and independent living skills	Vocational and living skills	The results show low results for IL: 95% of those with ID and 53% of those with SLD lived with their parents. Results are better for other domains
Powers et al., 2012	All disabilities in foster care	16.8	Self-determination	Experimental and longitudinal design with pre/post/foll	TAKE CHARGE program	Gaining skills in achievement, self-regulation	Participants in the program achieved higher postsecondary results than the

133

						, setting goals, and setting a plan to accomplish goals	control group engagement in key independent living activities, and other domains, with moderate to large effect sizes for the differences between groups
				ow-up procedure using multiple instruments/ assessment tools			
Roberts, 2013*	All disabilities	16-22	Motivation theory, self-determination, quality of life	Survey	Texas Statewide Youth Leadership Forum to increase self-advocacy	Postsecondary domains: employment, education, and IL	Participants who were mentors in the program had higher IL outcomes, and being under 21 when participating in the program increased the odds of living independently postsecondary
Ross et al., 2013	Developmental disabilities	College level graduates	Ecological	Survey	Taft College Transition to Independent Living (TIL) program	Functional and academic skills	At follow-up 94% of graduates lived independently, all but 3 had a bank account, and 18% reported being able to prepare meals independently

134

Information Regarding Variables

Variable	Respondent	Description	Type	Range	Missing
Ethnicity	District	Ethnicity with 4 categories: African American, Hispanic, White, and Other (aggregate of Asian/Pacific Islander, American Indian/Alaska native, and Multi/Other)	Categorical	0 – African American 1 – Hispanic 2 – Other 3 – White	Any missing
Disability Label	District	Disability by the 12 federally mandates IDEA categories	Nominal	1-12	Any missing
Family's Income Above Poverty	Parent	Poverty level calculated based on number of persons in household, number of children in household, and annual income	Dichotomous	0 – no 1 – yes	Any missing
Gender	District	Youth's gender	Dichotomous	1 – male 2 – female	Any missing
Age	District	Youth's age	Categorical	1 – 13-14 2 – 15 3 – 16 4 – 17	
Self Care Skill	Parent	Sum of how well youth dresses or	Continuous	2 - 8	Missing if any item

		feeds him or herself			is missing
Mental Skill	Parent	Sum of how well youth looks up telephone numbers, tells time, reads and understands signs, and counts change	Continuous	4 - 16	If more than one item is missing scale is missing
Social Skill	Parent	Sum of social assertion, self control, and cooperation	Continuous	0 - 22	If more than one item is missing scale is missing
Household Responsibilities Skill	Parent	Sum of how well youth fixes own breakfast or lunch, does laundry, straightens own room or living area, and buys a few things at the store	Continuous	4 - 16	If more than one item is missing scale is missing
Personal Autonomy	Youth	Sum of 10 items from the Arc's Self-Determination Scale	Continuous	10 - 40	Missing if any item is missing
Self Realization	Youth	Sum of 5 items from the Arc's Self-Determination Scale	Continuous	5 - 20	Missing if any item is missing
Psychological Empowerment	Youth	Sum of 6 items from the Arc's Self-Determination Scale	Continuous	0 - 6	Missing if any item is missing
Parental Expectations	Parent	Likelihood that youth will live away from home without supervision	Continuous	1 – definitely will not to 4 – definitely will	Any missing
General Parental	Parent	Sum of parental involvement	Continuous	0 – none	Any

Involvement		indicators: adult went to parent/teacher conference, adult attended general school meeting, adult attended school or class events, adult volunteered at the school		to 4 – very involved	missing
IEP Participation	Parent	Adult went to IEP meeting for special education program	Dichotomous	0 – no 1 – yes	Any missing
Community Activities	Parent	Participated in out-of-school activities	Dichotomous	0 – no 1 – yes	Any missing
Inclusion	Transcript	Percent of credits earned in general education: "under 80%" and "80% and over" of credits earned in general education	Dichotomous	0 – less than 80% 1 – 80% and over	Any missing
Primary Transition Goal is IL	School Program	Primary post-HS goal (transition plan): Live independently	Dichotomous	0 – no 1 – yes	Any missing
Student's Role in Transition Planning	School Program	Student with transition plan: student's role in transition planning	Continuous	1 – did not attend to 4 – took leadership role	Any missing
Participated in School Sponsored Work	Parent	Youth participated in a school sponsored work activity	Dichotomous	0 – no 1 – yes	Any missing
Living Status	Youth/ Parent	Where youth currently lives; considered to live independently if living on his/her own, with a spouse or	Dichotomous	0 – no 1 – yes	Any missing

roommate, in college or military dormitories, or on the job, and not living independently if they lived with a family member, foster parent/guardian, in an institution, or residential home

Subpopulation Count

Variable	Unweighted Count* (in sample)	Unweighted Variable Percent
Lives Independently	4730	
No	3280	69
Yes	1450	31
Ethnicity	4910	
African American	890	18
Hispanic	550	11
Other	140	3
White	3340	68
Disability Label	4910	
Learning Disability	390	8
Speech Impairment	430	9
Intellectual Disability	450	9
Emotional Disturbance	380	8
Hearing Impairment	480	10
Visual Impairment	400	8
Orthopedic Impairment	520	11
Other Health Impairment	530	11
Autism	580	12
Traumatic Brain Injury	200	4
Multiple Disabilities	470	10
Deaf/Blindness	90	2
Family Income	4430	
Below Poverty	830	19
Above Poverty	3600	81
Gender	4910	
Male	3150	64
Female	1770	36
Age	4910	
13 – 14	1590	32
15	1300	27
16	1240	25
17	770	16
Functional Mental Skill	4840	

Social Skill	4780	
Household Responsibilities Scale	4860	
Self-Care Skill	4880	
Personal Autonomy	2780	
Self Realization	2900	
Psychological Empowerment	2900	
Parental Expectations for Living Away from Home Without Supervision	4710	
Definitely Will Not	730	15
Probably Will Not	750	15
Probably Will	1450	31
Definitely Will	1780	39
General Parental Involvement	4880	
No Involvement	300	6
Little Involvement	780	16
Some Involvement	1330	27
More Involvement	1590	33
Very Involved	880	18
Parent IEP Participation	4530	
No	370	8
Yes	4170	92
Community Activities Participation	4870	
No	2380	49
Yes	2490	51
Primary Goal to Live Independently	2120	
No	1230	58
Yes	890	42
Student's Role in Transition Planning	2082	
Did Not Attend	190	9
Was Present	580	28
Provided Some Input	1070	51
Took Leadership Role	250	12
Percent of Credits Earned in General Education	3170	
Less than 80%	1390	44
80% and Over	1780	56
Participated in School Sponsored Work Activity	2870	
No	2300	80
Yes	580	20

* Raw count rounded to the nearest ten (IES procedure)

Vita

Irina Cain was born in Iasi, Romania, and is an American citizen. She completed her undergraduate work in Psychopedagogy at Alexandru Ioan Cuza University in Iasi and her M.Ed. in Special Education at University of Mary Washington in Fredericksburg, VA. Her doctoral work focused on transition to adulthood for students with disabilities, with a specific interest in how educational and family factors are associated with postsecondary outcomes. Before beginning her doctoral work, she worked for six years as a special education teacher in grades second through fifteenth, teaching students with diverse disability labels.

During her doctoral work she delivered 20 peer-reviewed presentations at national conferences, wrote a policy paper, and co-authored four journal articles and three book chapters.