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Best Practices in Transition to Adult Life for Youth with Intellectual Disabilities: A National Perspective Using the National Longitudinal Transition Study-2

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Best Practices in Transition to Adult Life for Youth with Intellectual Disabilities: A National Perspective Using the National Longitudinal Transition Study-2

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Abstract

Youth with intellectual disabilities have been found to experience poor postschool outcomes compared to youth with other disabilities and youth in the general population (Newman, Wagner, Cameto, & Knokey, 2009). To improve postschool outcomes, several best practices are recommended by researchers and professionals in the field of transition either specifically for youth with intellectual disabilities or all youth with disabilities. A handful of studies have examined the extent to which best practices are implemented and some nonexperimental studies have found that best practices are predictive of postschool outcomes. However, no study has yet examined whether the combination of several best practices is predictive of outcomes in multiple domains for youth with intellectual disabilities or provided a comprehensive examination of whether individual, family, and school characteristics make a difference in whether youth with intellectual disabilities experience best practices. The present study analyzed data from the National Longitudinal Transition Study-2 to examine the extent of use of best practices and factors that affect best practice use, and to identify whether best practices are predictive of postschool outcomes after controlling for other factors for youth with intellectual disabilities. In descriptive and comparative analyses, variation was found in the proportion of youth who had received each of the best practices with almost all youth reported to have received transition planning and less than half of youth reported to have experienced interagency involvement, yet there was no discernible pattern in the characteristics of youth that was associated with an increased likelihood of receiving each best practice. In predictive logistic regression analyses, the combination of five best practices was found to significantly predict the outcomes of employment, postsecondary

education, and enjoyment of life after controlling for youth, family, and school characteristics. In these analyses, parent expectations for employment and postsecondary education were some of the strongest predictors of postschool success. Although this study had several limitations, these findings suggest that best practices may be predictive of postschool success and highlight the importance of having high expectations for all youth. These findings must be replicated in future longitudinal research studies.

Chapter 1

Statement of the Problem

The transition from school to adult life is an exciting but daunting period of time for all youth. Between their teenage years and mid- to late-20s, youth set off on paths toward financial, residential, and emotional independence and begin to take on adult roles (Jekielek & Brown, 2005). For many youth, this transition is successful, but for others, achieving success is more difficult (Jekielek & Brown). The transition to adult life is particularly challenging for youth with disabilities, who experience poor outcomes relative to youth without disabilities. The National Longitudinal Transition Study (NLTS), which followed youth with disabilities between 1985 and 1990 as they made the transition from school to adult life, and the National Longitudinal Transition Study-2 (NLTS2), which followed youth with disabilities between 2001 and 2009, have consistently found that youth with disabilities are less likely than youth in the general population to find employment or enroll in postsecondary education (Newman, Wagner, Cameto, & Knokey, 2009; Wagner, Newman, Cameto, Garza, & Levine, 2005). The success of this transition is affected by a number of factors, including individual and family characteristics, school experiences, and postschool supports (Blackorby, Knokey, Wagner, Levine, Schiller, & Sumi, 2007; Jekielek & Brown).

For youth with intellectual disabilities, as with all youth both with and without disabilities, the transition from school to adult life is "marked by growth and change, but also by increased uncertainties and challenges" (Blacher, 2001, p. 174). By definition, individuals with intellectual disabilities (a term that has now replaced "mental retardation;" Rosa's Law, 2010) experience significant limitations in intellectual

functioning (measured by IQ) and adaptive behavior (which includes conceptual, social, and practical skills; American Association on Intellectual and Developmental Disabilities, 2010; Luckasson et al., 2002). Youth with intellectual disabilities are more likely than youth with learning disabilities or emotional/behavioral disorders to stay in school until they age out of eligibility for special education services at age 21 and much less likely than almost all other youth with disabilities to earn a regular high school diploma (Wagner et al., 1991; Wagner et al., 2005). Individuals with intellectual disabilities typically require lifelong support and are often at risk of being excluded from participation in society (Schalock, 2004). Indeed, most recent reports of the postschool outcomes of youth with intellectual disabilities have found that these youth are less likely than youth with other disabilities to be engaged in school, work, or preparation for work during the early postschool years (Newman et al., 2009).

To address the poor postschool outcomes of youth with disabilities, transition planning has been a mandated component of the Individuals with Disabilities Education Act (IDEA) since 1990. Although it was originally assumed that access to education through the Education of All Handicapped Children Act (EHA) passed in 1975 would lead to increased independence in work and independent living outcomes, it became apparent by the time of the first reauthorization of this law in 1983 that this was not occurring (deFur, 2003; Wagner, Blackorby, Cameto, & Newman, 1993; Will, 1983). Beginning with initiatives for research and model demonstrations in transition planning in the 1983 amendments to the EHA that led to the requirement of documentation and provision of needed transition services in the Individuals with Disabilities Education Act (IDEA) amendments of 1990, subsequent reauthorizations of the IDEA in 1997 and 2004

have further defined and supported the focus on transition planning and services (deFur, 2003; Kohler & Field, 2003). Transition services defined in the IDEA (2004) are:

> a coordinated set of activities for a child with a disability that: (A) is designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including post-secondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation; (B) is based on the individual child's needs, taking into account the child's strengths, preferences, and interests; and (C) includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and, when appropriate, acquisition of daily living skills and functional vocational evaluation (20 U.S.C. § 1401 (34)).

From age 16 on, the Individualized Education Program (IEP) must document postschool goals and a plan for the services and course of study needed to achieve these goals (20 U.S.C. § 1414 (d)(1)(A)(i)(VIII)). As with all IEP planning, parents and youth should be involved in development of both the goals and the plan for services. Furthermore, youth with disabilities must be invited to their IEP meetings when transition planning will be discussed. Although transition services were initially conceptualized as a bridge to postschool employment (Will, 1983), it was soon realized that a broader conceptualization of transition outcomes was needed (Halpern, 1993). As shown in the definition above, transition services are now conceptualized as leading to many outcomes

including employment, postsecondary education, independent living, and community participation.

Best Practices in Transition

After transition planning and services became a mandated part of the IDEA in 1990, an increasing number of reports in the transition literature focused on providing lists of "best practices" (Test, Mazzotti, et al., 2009). The term "best practices" in transition refers to a number of components that are considered essential in planning and providing support for the transition to adult life. These practices represent *alterable* variables that schools can implement to increase the chances of success of youth with intellectual disabilities over and above *unalterable* variables, such as the characteristics of youth or their families. Lists of best practices have been developed based on reviews of the literature, studies of the perspectives of transition stakeholders, analyses of model demonstration or exemplary programs, and consensus of the opinions of researchers and professionals in the field of transition (Greene, 2009; Test, Mazzotti, et al.). As early as 1993, Paula Kohler noted that a number of transition practices had become regarded as "best practice" despite a lack of empirical evidence in support of their use, and remarked that, "Somewhere these practices have been endorsed, or again, socially validated by the field as important elements of the transition process" (p. 116). Over time, lists of best practices in transition have continued to be published and have changed very little since the early 1990s. In five of the most recent comprehensive lists of best practices in transition either for youth with intellectual disabilities (Bambara, Wilson, & McKenzie, 2007; Wehman, 2006) or youth with all disabilities (Flexer & Baer, 2008; Greene, 2009; Kohler & Field, 2003), seven common best practices can be identified. These are: (a)

youth involvement in transition planning and other strategies to develop self-determination; (b) family involvement in transition planning; (c) individualized planning for transition; (d) instruction and experiences that prepare youth for employment, including vocational education and work experiences; (e) instruction and experiences that prepare youth for independent living, including a functional life skills curriculum and community-based instruction; (f) general education participation and age-appropriate inclusion with peers without disabilities; and (g) interagency involvement and collaboration.

Evidence for Best Practices

Although these recommended best practices are generally viewed as valid (Morningstar, Kleinhammer-Trammill, & Lattin, 1999; Patton, 2004), recent efforts have underscored the importance of identifying evidence-based practices in all areas of education including transition (Test, Mazzotti et al., 2009; Test, Fowler, et al., 2009). To date, the direct effect of recommended best practices in transition on postschool outcomes has not been examined through experimental or quasiexperimental research (Test, Fowler, et al., 2009). Instead, the strongest evidence linking these practices to postschool outcomes comes from nonexperimental quantitative research studies that have used either correlational or comparative research designs to identify variables that are associated with postschool outcomes. A number of studies have examined quantitative follow-up or longitudinal survey data to identify the relationships between indicators of recommended best practices, referred to here as school program variables, and postschool outcomes either for youth with intellectual disabilities or for youth with all disabilities. In these studies, postschool outcomes that have been measured include (a) employment

outcomes such as competitive employment in integrated settings (e.g., Doren & Benz, 1998; Luecking & Fabian, 2000), wages (e.g., Harvey, 2002; Hasazi, Gordon, & Roe, 1985), and receiving benefits (e.g., Luftig & Muthert, 2005), (b) postsecondary education outcomes such as enrollment in postsecondary education (e.g., Halpern, Yovanoff, Doren & Benz, 1995; Miceli, 2008), (c) independent living outcomes such as living independently (e.g., Heal, Rubin, & Rusch, 1998; Heal & Rusch, 1994) or independent financial management (e.g., Cameto, 1997), (d) social inclusion outcomes such as having social contacts (Cameto, 1997), (e) quality of life outcomes that combine outcomes across multiple domains (e.g., Heal, Khoju, & Rusch, 1997; Heal, Khoju, Rusch, & Harnisch, 1999; Kraemer, McIntyre, & Blacher, 2003), and (f) general measures of success in adult life such as productive engagement in postsecondary education, work, or preparation for work (e.g., Benz, Lindstrom, & Yovanoff, 2000; Benz, Yovanoff, & Doren, 1997). As nonexperimental studies do not involve manipulation of an independent variable, identification of whether youth experienced best practices typically has been made by examining indicators of best practices. For example, indicators of whether youth experienced the best practice of preparation for employment include the variables of receiving vocational education in high school (e.g., Baer et al., 2003) and having work experiences during high school (e.g., Kraemer et al., 2003). Identification of whether youth experienced best practices has been conducted by surveying youth, parents, or teachers (e.g., Wagner, Blackorby, Cameto, & Newman, 1993) or by reviewing school records (e.g., Sitlington et al., 1992).

Correlational studies have used NLTS and NLTS2 data and school-, program-, or state-level follow-up data to identify predictors of postschool outcomes using statistical

analyses such as multiple linear or logistic regression. For youth with intellectual disabilities, correlational studies have found that work experiences (Kraemer et al., 2003; White & Weiner, 2004), inclusion in general education (Cameto, 1997; White & Weiner), family involvement (Kraemer et al.), and preparation for independent living through life skills instruction (Cameto) or community-based instruction (White & Weiner) were predictive of postschool outcomes including employment, independent living, and quality of life. For youth with all disabilities, correlational studies have found that preparation for employment through work experiences (Baer et al., 2003; Benz et al., 2000; Benz et al., 1997; Doren & Benz, 1998; Fabian, Lent, & Willis, 1998; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995; Luecking & Fabian, 2000; Shandra & Hogan, 2008), and vocational education (Baer et al., 2003; Harvey, 2002; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995; Miceli, 2008; Schalock et al., 1986; Shandra & Hogan, 2008; Wagner et al., 1993), and general education inclusion as indicated by hours or percentage of time spent in general education classes or placement in integrated settings (Blackorby, Hancock, & Siegel, 1993; Halpern, Yovanoff, Doren, & Benz,1995; Heal , Khoju, & Rusch, 1997; Heal et al., 1999; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995; Hebbeler, 1993; Wagner et al., 1993), and taking academic classes (Baer et al., 2003; Blackorby et al., 1993; Heal & Rusch, 1994; Heal & Rusch, 1995; Sun, 2007) were predictive of postschool outcomes including employment, independent living, and quality of life. Relatively few correlational studies have examined youth involvement (Miceli, 2008), parent involvement (Schalock et al., 1986; Wagner et al., 1993), transition planning (Halpern et al., 1995; Miceli, 2008; Wagner et al., 1993), preparation for independent living (Blackorby et al., 1993; Cameto, 1997; Heal & Rusch,

1994; Thompson, 1996), and interagency collaboration (Wagner et al., 1993). In general, all school program variables have been found to be significant predictors of postschool outcomes, although some studies have found that vocational education (Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995), work experiences (Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995;Wagner et al., 1993), life skills instruction (Heal & Rusch, 1994), general education participation (Halpern et al., 1995; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995), and taking academic classes (Heal & Rusch, 1994; Heal & Rusch, 1995) were nonsignificant predictors of postschool outcomes.

Comparative studies have used school-, program-, or state-level follow-up data to identify differences in outcomes based on whether youth received particular school program variables using chi-square tests, ANOVA, or descriptive comparisons of outcomes. For youth with intellectual disabilities, comparative studies have found significantly higher proportions of successful employment outcomes for youth who received work experiences or vocational education (Hasazi, Gordon, Roe, & Hull, 1985) and for youth who had participated in a program that included transition planning, age-appropriate inclusion, and interagency collaboration than for youth who did not have these experiences (Zafft et al., 2004). For youth with all disabilities, comparative studies have identified more successful employment outcomes for youth who had received work experiences (Colley & Jamison, 1998), vocational education (Colley & Jamison, 1998; Hasazi, Gordon, & Roe, 1985), and inclusion in general education (DiGiacomo, 2002) than for youth who had not received these school program variables. Additionally, greater percentages of youth who had participated in programs that emphasized either vocational education and inclusion (Luftig & Muthert, 2005) or vocational or academic

coursework, transition planning, and family involvement (Aspel et al., 1998) achieved successful employment or postsecondary education outcomes compared to outcomes reported for youth with disabilities in the NLTS who may not have experienced these variables (e.g., Blackorby & Wagner, 1996).

In addition to school program variables, a number of unalterable factors that affect postschool outcomes have been identified through correlational and comparative studies. Some studies have found that only youth-related characteristics and no school program variables were significant predictors of employment or independent living outcomes (e.g., Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995). Individual characteristics that have been found to be associated with postschool outcomes include gender, ethnicity, high school completion, disability, functional academic skills or IQ, self-determination, and self-care or adaptive behavior skills. In studies of both youth with intellectual disabilities and youth with all disabilities, males have been found to have significantly better employment outcomes than females (e.g., Benz et al., 1997; Doren & Benz, 1998; Harvey, 2002; Hasazi, Gordon, Roe, & Hull, 1985; Heal & Rusch, 1995; Rabren et al., 2002; Shandra & Hogan, 2008; Sitlington et al., 1992; Thompson, 1996; Wagner et al., 1993). However, in studies of other outcomes, being female has been found to be predictive of more favorable outcomes in the areas of quality of life, productive engagement, independent living, and postsecondary education (Cameto, 1997; Kraemer et al., 2003; Miceli, 2008; Sun, 2007; Wagner et al.). Similarly, being nonminority has been found to be associated with more favorable outcomes for youth with intellectual disabilities and youth with all disabilities in the areas of employment, independent living, and productive engagement (Benz et al., 1997; Cameto; Harvey,

2002; Luecking & Fabian, 2000; Shandra & Hogan; Sun; Wagner et al.). Completing high school has been found to be associated with more successful outcomes than dropping out of high school for youth with intellectual disabilities and youth with all disabilities in the areas of employment, postsecondary education, independent living, social inclusion, and productive engagement (Cameto; Harvey; Heal & Rusch, 1995; Miceli; Shandra & Hogan; Sun; Wagner et al.). Having a learning disability or other mild disability, or having higher functional academic skills or IQ, has been found to be associated with greater success than having mental retardation or having lower functional academic skills or IQ in the areas of employment, postsecondary education , independent living, and quality of life (Baer et al., 2003; Hasazi, Gordon, Roe, & Hull; Heal et al., 1997; Heal et al., 1998; Heal et al., 1999; Heal & Rusch, 1994; Heal & Rusch, 1995; Luecking & Fabian; Miceli; Rabren et al.; Schalock et al., 1986; Shandra & Hogan; Sun; Thompson). Youth with intellectual disabilities who have higher levels of self-determination have been found to experience more favorable employment and independent living outcomes (Wehmeyer & Schwartz, 1997; Wehmeyer & Palmer, 2003). Higher levels of self-care and adaptive behavior skills have been found to be associated with employment, independent living, and quality of life (Heal et al., 1998; Heal & Rusch, 1995; Kraemer et al.; Wagner et al).

Family characteristics that have been identified as predictors of or associated with differences in outcomes include family income, parent education level, parent employment, and parent expectations. Having higher family income, parents with higher education levels, and parents who were employed have been found to be associated with more favorable outcomes in the areas of employment, postsecondary education, and

independent living (Doren & Benz, 1998; Harvey, 2002; Heal & Rusch, 1995; Miceli, 2008; Shandra & Hogan, 2008; Sun, 2007; Wagner et al., 1993). Parent expectations that youth will attend postsecondary education have been found to be significant predictors of enrollment in postsecondary education (Miceli; Wagner et al.), and parent expectations that youth will live independently have been found to be significant predictors of independent living (Wagner et al.). Finally, the school characteristic of urbanicity of the school attended by the youth has been found to be associated with employment and independent living outcomes. Youth who had attended urban schools have been found to be more likely to be employed than youth who attended rural or suburban schools (Harvey; Hasazi, Gordon, & Roe, 1985; Rabren et al., 2002), yet conversely Baer et al. (2003) found that youth who attended rural schools were more likely to be employed than youth from urban or suburban schools and youth who attended suburban schools were more likely to enroll in postsecondary education than youth from urban or rural schools. Other factors that have also been suggested to be associated with postschool outcomes but that are beyond the scope of this review and focus of this study include state-level or district-level policies, recommendations for systemic change, and postschool services and supports (e.g., Certo et al., 2003; Edgar, 1988; Guy & Shriner, 1997; Rusch, Hughes, Agran, Martin, & Johnson, 2009).

In sum, although nonexperimental quantitative studies using correlational or comparative research designs are not ideal for establishing causal relationships between school program or other variables and postschool outcomes (Test, Mazzotti, et al., 2009), these types of studies are important for examining variables, such as transition-related variables, that are difficult to manipulate (Johnson, 2001). However, the current

nonexperimental literature does not provide a clear picture of whether school program variables that are indicators of best practice in transition for youth with intellectual disabilities are predictive of improved postschool outcomes over and above the impact of unalterable variables. Only a handful of nonexperimental quantitative studies have examined the relationship between school program variables and postschool outcomes for youth with intellectual disabilities (Cameto, 1997; Hasazi, Gordon, Roe, & Hull, 1985; Kraemer et al., 2003; Sitlington et al., 1992; White & Weiner, 2004; Zafft et al., 2004), and there are many limitations to these studies, including that transition experiences were only examined for youth in a particular geographic area (e.g., Hasazi, Gordon, Roe, & Hull; Kraemer et al.; Sitlington et al.; Zafft et al.), relationships were identified only with employment outcomes (e.g., Hasazi, Gordon, Roe, & Hull; Sitlington et al.; White & Weiner; Zafft et al.), or data were collected before transition planning became a mandated part of IDEA (e.g., Cameto; Hasazi, Gordon, Roe, & Hull). Furthermore, no studies have examined the relationship between youth involvement in transition planning and postschool outcomes for youth with intellectual disabilities, and very few studies have examined school program variables such as family involvement (Kraemer et al.), transition planning (Zafft et al.), life skills instruction (Cameto), and interagency collaboration (Zafft et al.). Based on a review of the quality of correlational research examining best practices in transition, Test, Mazzotti, et al. (2009) recommended that future research should (a) identify school program variables that are predictive of postschool outcomes for youth in specific disability groups (e.g., intellectual disabilities), (b) examine whether predictive relationships exist with outcomes more than a year after youth leave high school and over more than one time point, and (c) use national data

sources such as the NLTS2 for conducting these studies. One purpose of the present study was to address the gaps in the nonexperimental literature for youth with intellectual disabilities based on the recommendations made by Test, Mazzotti et al.

Extent of Use of Best Practices

A related issue that has been examined in the transition literature is the extent to which recommended best practices are being used. This issue has been examined through analyses of the content of IEPs (Everson, Zhang, & Guillory, 2001; Grigal, Test, Beattie, & Wood, 1997; Powers et al., 2005), descriptive analyses of data from the NLTS2 (e.g., Cameto, Levine, & Wagner, 2004; Katsiyannis, Zhang, Woodruff, & Dixon, 2005; Marder, Cardoso, & Wagner, 2003; Yu, Newman, & Wagner, 2009), observation of transition planning meetings (Martin, VanDycke, Greene, et al., 2006), and surveys of transition personnel (Agran, Cain, & Cavin, 2002; Baer, Simmons, & Flexer, 1996; Kraemer & Blacher, 2001; McMahan & Baer, 2001; Zhang, Ivester, Chen, & Katsiyannis, 2005; Zhang & Stecker, 2001). These studies have found that use of recommended best practices is limited for youth with intellectual disabilities. For example, for youth with intellectual disabilities, analyses of data from the NLTS2 have suggested that only about half of these youth provided input in their transition planning meetings (Katsiyannis et al., 2005) and only 88%, rather than 100% as would be required by IDEA, of youth with intellectual disabilities received transition planning (Cameto et al., 2004; Katsiyannis et al.). Parent attendance at transition planning meetings is reported to be over 80% (Katsiyannis et al.; Kraemer & Blacher, 2001), yet a third of teachers in one study reported frequently or occasionally developing transition plans for youth with intellectual disabilities with no or little input from youth or family (Zhang &

Stecker). Estimates of the extent to which youth with intellectual disabilities are provided with indicators of preparation for employment and independent living vary across studies but suggest that these school program variables are not provided to all youth with intellectual disabilities (e.g., Kraemer & Blacher; Marder et al., 2003; Yu et al., 2009). Furthermore, only about two thirds of youth with intellectual disabilities have been found to have taken a course in a general education setting (Yu et al.), and involvement of adult service agencies in transition planning for youth with intellectual disabilities has been reported to be low (Katsiyannis et al.). A number of factors have been found to affect the extent of use of best practices either for youth with intellectual disabilities or for youth with all disabilities, including gender (Baer et al., 2003; Doren & Benz, 1998; Newman, 2004; Powers et al.; Wagner et al., 1993), ethnicity (Cameto et al., 2004; Newman), disability or level of cognitive functioning (Grigal et al., 1997; Marder et al.; Newman ; Powers et al.; Yu et al., 2009), household income (Newman; Wagner et al.), and urbanicity or location of the school district (Baer et al.; Powers et al.). However, a comprehensive study of the extent of use of school program variables that are indicative of best practices for youth with intellectual disabilities and the factors that affect the extent to which these school program variables are received by youth with intellectual disabilities has not yet been provided.

Summary and Purpose of the Study

In summary, youth with intellectual disabilities have been found to fare worse in early adulthood compared to youth in the general population. Although transition planning and services are a mandated part of the educational programming for youth with disabilities under IDEA, transition researchers and professionals recommend several best

practices that go above and beyond the requirements of the law. Evidence supporting the use of these best practices for school programs is limited, particularly for youth with intellectual disabilities. Furthermore, studies examining the extent of use of these best practices have suggested that these practices are not universally implemented and that there may be factors that affect whether these practices are used; however, no study has yet examined this issue comprehensively for youth with intellectual disabilities. Research addressing both of these gaps is clearly warranted in order to make recommendations to improve the transition programming for youth with intellectual disabilities.

The purpose of the present study was to address the gaps in the literature on best practices for transition for youth with intellectual disabilities. The study had three purposes: First, the study examined the extent of use of the recommended best practices for youth with intellectual disabilities from a national perspective. Second, the study identified factors (such as individual, family, and school characteristics) that are associated with best practice use. Third, the study examined whether use of best practices predicted successful postschool outcomes for youth with intellectual disabilities above and beyond the effect of unalterable factors such as individual, family, and school characteristics. Several postschool outcomes including employment, postsecondary education, enjoyment of life, and social interactions were considered. Data from the NLTS2 that provide a national perspective on the transition and postschool experiences of youth with disabilities were used to answer these research questions. Although the best practices identified in the research were not examined directly through the NLTS2, information was gathered on several practices that could be considered indicators of best

practice use. These practices, referred to here as best practice school program variables, were: (a) youth involvement, (b) family involvement, (c) individualized transition planning, (d) work experiences, (e) life skills instruction, (f) inclusion in general education settings, and (g) interagency involvement. Findings from this study have several important implications for the field of transition, including adding to the evidence in support of the recommended best practices and identifying where inequities exist in the use of these practices.

Research Questions and Hypotheses

The three purposes of this study were examined through four research questions. These questions and hypotheses regarding findings are explained below:

Purpose 1: Describing the extent of use of best practice school program variables.

Research question (1) To what extent are best practice school program variables used for transition-age youth with intellectual disabilities? It was hypothesized that the best practice school program variables would not be found to be universally implemented for all youth with intellectual disabilities. Based on findings from studies that have examined best practice use for youth with intellectual disabilities (e.g., Cameto et al., 2004; Katsiyannis et al., 2005; Kraemer & Blacher, 2001; Marder et al., 2003; Yu et al., 2009; Zhang & Stecker, 2001) it was expected that transition planning and family involvement would be the most widely implemented variables, with at least 80% of youth with intellectual disabilities receiving these variables. Preparation for employment through work experiences, life skills instruction, and inclusion in general education were expected to be received by at least half of youth with intellectual disabilities. However,

extent of youth involvement and interagency collaboration were expected to be received by no more than 25% of youth with intellectual disabilities.

Purpose 2: Comparing the characteristics of youth who received best practice school program variables to those who did not.

Research question (2) Do significant differences exist in whether youth received each best practice school program variables based on individual, family, and school characteristics? It was hypothesized that differences would exist in receiving each best practice based on individual, family, and school characteristics. Based on previous research (e.g., Baer et al., 2003; Cameto et al., 2004; Doren & Benz, 1998; Grigal et al., 1997; Marder et al., 2003; Newman, 2004; Powers et al., 2005; Wagner et al., 1993; Yu et al., 2009), it was expected that differences would be found in the percentage of youth who experienced each best practice based on gender, ethnicity, functional academic skills, household income, and urbanicity of the school attended by youth. In particular, it was expected that significantly more males, nonminority youth, youth with high functional academic skills, youth from families with higher incomes, and youth in suburban settings would have experienced each of the seven best practice school program variables than females, minority youth, youth with lower functional academic skills, youth from families with low income, and youth in rural or urban settings. It was also expected that additional individual, family, and school characteristics that had not been examined in previous studies (such as high school completion status, self-determination, adaptive behavior skills, parent level of education, parent employment, and parent expectations) would make a difference in the percentage of youth receiving best practices. In particular, it was expected that significantly more youth who completed high

school, youth with higher self-determination or adaptive behavior skills, youth whose parents have higher levels of education and are employed, and youth whose parents expected them to attend college or find employment would have experienced each of the seven best practice school program variables than youth who dropped out of high school, youth with low self-determination or adaptive behavior skills, youth whose parents are less educated and not employed, and youth whose parents did not expect them to attend college or find employment.

Purpose 3: Identifying predictive relationships between best practice school program variables and postschool outcomes.

Research question (3a) Do individual, family, and school characteristics predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school? Based on findings of previous studies (e.g., Baer et al., 2003; Benz et al., 1997; Doren & Benz, 1998; Harvey, 2002; Hasazi, Gordon, Roe, & Hull, 1985; Heal et al., 1997; Heal et al., 1998; Heal et al., 1999; Heal & Rusch, 1994; Heal & Rusch, 1995; Kraemer et al., 2003; Luecking & Fabian, 2000; Miceli, 2008; Rabren et al., 2002; Shandra & Hogan, 2008; Sitlington et al., 1992; Sun, 2007; Thompson, 1996; Wagner et al., 1993; Wehmeyer & Schwartz, 1997; Wehmeyer & Palmer, 2003), it was hypothesized that characteristics would significantly predict successful postschool outcomes in these four areas and at both time points. However, it was also expected that certain characteristics would be stronger predictors of postschool outcomes than others. Previous research suggests that the most pertinent factors may be gender, ethnicity, high school completion status, functional academic skills or IQ, self-determination, adaptive behaviors, household income, head of

household education level, parent employment, parent expectations, and urbanicity of the school the youth attended.

Research question (3b) Controlling for individual, family, and school characteristics, does experiencing each best practice school program variable predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school? As previous research has found that school program variables are predictive of some postschool outcomes for youth with intellectual disabilities (Cameto, 1997; Hasazi, Gordon, Roe, & Hull, 1985; Kraemer et al., 2003; Sitlington et al., 1992; White & Weiner, 2004; Zafft et al., 2004) and youth with all disabilities (e.g., Baer et al., 2003; Benz et al., 2000; Benz et al., 1997; Blackorby et al., 1993; Doren & Benz, 1998; Fabian, Lent, & Willis, 1998; Halpern et al.,1995;Harvey, 2002; Heal et al., 1997; Heal et al., 1998; Heal et al., 1999; Heal & Rusch, 1994; Heal & Rusch, 1995; Luecking & Fabian, 2000; Miceli, 2008; Shandra & Hogan, 2008; Wagner et al., 1993), it was hypothesized that best practice school program variables would be significant predictors of postschool outcomes when controlling for other characteristics. Although previous research has not examined the combined effect of these school program variables, it was expected that all school program variables would be equally predictive of postschool outcomes.

Significance

Identifying effective practices for improving postschool outcomes for youth with intellectual disabilities is of the utmost importance for ensuring that all youth leave school on the path to success. Yet previous research has provided limited evidence in support of recommended best practices for transition for youth with intellectual

disabilities. To address this lack of evidence, the most ideal study would use experimental or quasiexperimental methods to conduct an empirical evaluation of the effectiveness of recommended best practices on postschool outcomes for youth with intellectual disabilities and would follow this sample for many years into adulthood (Test, Mazzotti, et al., 2009). However, the nature of conducting research with transition-age youth and the numerous factors that would influence outcomes would make this a highly impractical study to conduct, particularly given the current lack of substantial evidence in support of these practices. A useful alternative would be to take a closer look at the relationship between the practices that are recommended and the postschool outcomes experienced by youth with intellectual disabilities who received these practices. This information builds evidence in support of each of the recommended best practices that could then be strengthened through future empirical studies. Furthermore, an examination of the extent to which youth with intellectual disabilities are experiencing these recommended best practices and factors that affect implementation has important implications for identifying the state of current practice and for suggesting directions for future research. For example, identifying that these practices are not widely used would imply that research on strategies to increase implementation is warranted. However, given the poor outcomes experienced by youth with intellectual disabilities, identifying that these practices are widely used may imply that *different* practices for transition need to be identified or that research on the *quality* of implementation is needed.

In summary, to build the evidence in support of best practices, this study examined whether the recommended best practices for transition were being implemented for transition-age youth with intellectual disabilities, whether certain factors affected best

practice use, and whether these practices and other characteristics were predictive of early postschool outcomes.

Chapter 2

Review of the Literature

This chapter begins with an overview of the early postschool outcomes of youth with intellectual disabilities and consideration of why the transition to adulthood is particularly challenging for these youth. Next, recommended best practices for transitioning youth with intellectual disabilities are reviewed. Third, evidence in support of these practices is reviewed and critically evaluated. Other unalterable factors that have been found to influence the postschool outcomes of youth with disabilities are also reviewed. Fourth, research on the extent to which best practices are used and factors that have been found to affect best practice use are presented. Finally, the state of research on best practice use and effectiveness for youth with intellectual disabilities is summarized and two areas in which research is needed are identified.

Youth with Intellectual Disabilities

Reports of the postschool outcomes of youth with intellectual disabilities have consistently found that these youth experience less success in early adulthood compared to both youth with other disabilities and youth without disabilities. In a report of findings from the National Longitudinal Transition Study (NLTS), a large-scale study which followed youth with disabilities who left high school between 1985 and 1990, Blackorby and Wagner (1996) found that 37% of youth with intellectual disabilities (those served in the category of mental retardation) were competitively employed 3 to 5 years after leaving high school compared to 70% of youth in the general population. At this time, only 13% of youth with intellectual disabilities had enrolled in any postsecondary education, compared to 68% of youth in the general population, and only 24% of youth

with intellectual disabilities were living independently, compared to 60% of youth in the general population. In the two decades since the NLTS, postschool outcomes for youth with disabilities have improved substantially in some areas but youth with intellectual disabilities continue to experience less success than other youth in the early postschool years (Wagner, Newman, Cameto, & Levine, 2005). For example, in the most recent report of findings from the National Longitudinal Transition Study-2 (NLTS2), a second large-scale longitudinal study following 11,000 youth with disabilities who left school between 2001 and 2009, only 31% of youth with intellectual disabilities who had been out of high school for up to 4 years were found to be employed compared to 66% of youth in the general population (Newman, Wagner, Cameto, & Knokey, 2009). Average hourly earnings for youth with intellectual disabilities were much less than youth without disabilities ($7.00 per hour vs. $9.20 per hour). At this time, 27% of youth with intellectual disabilities had enrolled in any postsecondary education compared to 53% of youth in the general population, and 14% of youth with intellectual disabilities were living independently compared to 28% of youth in the general population. Perhaps most disturbingly, youth with intellectual disabilities were reported to have less social inclusion than other youth of the same age. For example, only 69% of youth with intellectual disabilities reported that they saw friends outside of school or work at least weekly compared to 92% of youth with learning disabilities and 84% of youth with emotional/behavioral disorders, and only 28% of youth with intellectual disabilities took part in at least one activity in the community in the past year compared to 51% of youth with learning disabilities and 46% of youth with emotional/behavioral disorders. Clearly,

successful postschool outcomes are not a reality for many youth with intellectual disabilities.

However, an important consideration when evaluating these findings is whether the outcomes that have been measured are meaningful for individuals with intellectual disabilities. As transition was initially proposed as a process that would lead to employment (Will, 1983) the vast majority of research has focused on employment outcomes for youth with disabilities. Although this view on transition was quickly seen as limited and was expanded to include a focus on multiple life dimensions (Halpern, 1993), there has been little effort to move away from basic indicators of postschool success such as employment and independent living to make schools accountable for quality of life outcomes (Wehmeyer & Schalock, 2001). According to Schalock (2004), quality of life is understood to be a multidimensional concept that encompasses eight domains, including emotional well-being, interpersonal relations, material well-being, personal development, physical well-being, self-determination, social inclusion, and rights. In essence, having a good quality of life includes physical and material well-being, performance of adult roles, and personal fulfillment (Halpern). The advantage, and also the challenge, of evaluating quality of life as an outcome of transition is that it involves both objective assessment of whether youth have achieved societal expectations and subjective assessment of whether youth are satisfied with their current living, working, learning, and social environments (Halpern; Turnbull, Turnbull, Wehmeyer, & Park, 2003). For individuals with intellectual disabilities, in particular, a focus on quality of life outcomes may be more meaningful as it does not rely solely on assessment of independence. Although research on quality of life outcomes for youth with intellectual

disabilities is limited, recent reports from the NLTS2 have found that about a quarter of youth with intellectual disabilities report that they are not satisfied with their current job and about 40% of youth with disabilities report that they are not satisfied with their current living situation (Newman et al., 2009).

Achieving successful postschool outcomes including quality of life is challenging for youth with intellectual disabilities for a number of reasons. First, stereotypes regarding the potential of individuals with intellectual disabilities present a major barrier to postschool success. Many people fail to recognize that individuals with intellectual disabilities can live, work, and learn in community settings (Siperstein, Norins, Corbin, & Shriver, 2003). Indeed, research has shown that despite legislative action intended to increase integrated employment for individuals with disabilities, the majority of adults with intellectual disabilities still are placed in segregated work or day programs (Rusch & Braddock, 2004; Wehman, Revell, & Brooke, 2003). Negative stereotypes regarding adult life for individuals with intellectual disabilities may lead persons involved in transition to unnecessarily limit the potential of these youth (Devlieger & Trach, 1999; Wehman, 2006). Second, self-determination is necessary to self-direct the transition to adulthood, yet youth with intellectual disabilities may have had limited opportunities to develop these necessary skills. Self-determination can be conceptualized as "volitional actions that enable one to act as the primary causal agent in one's life and to maintain or improve one's quality of life" (Wehmeyer, 2005, p.117). Self-determination skills including decision-making, goal setting and planning, and self-advocacy, are critical for self-direction of the transition to adulthood through exercising autonomy and voicing opinions and desires (Bremer, Kachgal, & Schoeller, 2003; Payne-Christiansen &

Sitlington, 2008; Wehmeyer & Gragoudas, 2004). However, research has documented low levels of self-determination in adults with intellectual disabilities (e.g., Wehmeyer & Metzler, 1995) and few opportunities for youth with intellectual disabilities to acquire these necessary skills (Wehmeyer, Agran, & Hughes, 2000). Finally, individuals with intellectual disabilities may need lifelong support yet accessing supports can be challenging. After exiting the school system, youth with intellectual disabilities will need to access a number of services to ensure they have the necessary supports to live and work in their communities (Wehman, 2006). However, understanding the adult service system and accessing services is a difficult process for youth with disabilities and their families (Hanley-Maxwell, Whitney-Thomas, & Pogoloff, 1995; Research and Training Center on Community Living, 2007), and this presents a major barrier to successful outcomes (Crane, Gramlich, & Peterson, 2004). Although many other barriers exist, low expectations, limited self-determination, and challenges with accessing supports are perhaps the most difficult obstacles that youth with intellectual disabilities face in the transition to adulthood.

Best Practices for Transition

Researchers and professionals have made several recommendations to improve the poor postschool outcomes experienced by youth with intellectual disabilities. Table 1 presents a summary of recommended best practices made in a representative sample of five comprehensive reports published in the last 10 years for transitioning either youth with intellectual disabilities specifically (Bambara, Wilson, & McKenzie, 2007; Wehman, 2006) or youth with disabilities in general (Flexer & Baer, 2008; Greene, 2009; Kohler & Field, 2003). These practices can be categorized into seven recommendations:

1. **Youth involvement in transition planning and other strategies to develop self-determination.** As discussed previously, self-determination is an important skill for self-directing the transition to adulthood. Involving youth in their transition planning, including development and implementation of the IEP, meaningful participation in the IEP meeting, and self-monitoring of goal achievement is a recommended practice for development of self-determination skills (Test et al., 2004). In particular, youth leadership of IEP meetings is thought to provide an opportunity to develop self-determination skills that, when practiced over a number of years, will allow youth to become effective self-advocates and to assert control over their lives (Test et al.). A number of strategies have been developed to promote youth leadership of IEP meetings (e.g., Self-Advocacy Strategy: Hammer, 2004; Lancaster, Schumaker, & Deshler, 2002; Test & Neale, 2004; Van Reusen & Bos, 1994; Self-Directed IEP: Arndt, Konrad, & Test, 2006; Martin, Van Dycke, Christensen, et al., 2006; Snyder & Shapiro, 1997; and Student-Led IEP: Mason, McGahee-Kovac, Johnson, & Stillerman, 2002).

2. **Family involvement in transition planning**. Families play an important role in helping youth with intellectual disabilities shape their vision for adult life and in planning transition services to achieve this vision (Morningstar, Turnbull, & Turnbull, 1995). For youth with intellectual disabilities in particular, family support will continue into early adulthood, for example through continued residential support (Wagner et al., 2005) or through supports for securing employment (Devlieger & Trach, 1999; Hasazi, Gordon, Roe, Hull, et al., 1985). Although families report that they are ready to transfer the responsibility for their children's support to adult service providers, many experience challenges in securing the necessary supports to be able to relinquish this responsibility

(Hanley-Maxwell et al., 1995). Furthermore, parents of culturally and linguistically diverse youth with disabilities report that transition planning often does not take into account the effect of culture on visions for adult life (Kim & Morningstar, 2005; Rueda, Monzo, Shapiro, Gomez, & Blacher, 2005). For these reasons, involving families in the transition planning process is recommended to increase the likelihood of a successful transition to adult life.

3. Individualized planning for transition. By law, educational programs, including transition services, must be developed based on individual assessment of the youth's goals, strengths, and needs (IDEA, 2004). Person-centered planning is recommended for creating an individualized vision for the future and developing a transition plan to achieve this vision (Flexer & Baer, 2008; Greene, 2009; Wehman, 2006). Once a plan is developed, it should not be viewed as an add-on to the youth's educational program but should be used to guide the development of all secondary school experiences (referred to as transition-focused education; Kohler & Field, 2003).

4. Instruction and experiences that prepare youth for employment. Achieving postschool employment is an important goal of transition. To increase the likelihood of postschool employment, a number of practices have been recommended. These include instruction in both specific occupational and general prevocational and vocational skills (Greene, 2009) and work experience, preferably paid, on the high school campus and in community settings (Bambara et al., 2007; Flexer & Baer, 2008). Model programs such as the Bridges…from School to Work program have shown promising results for improving employment outcomes through high quality work-based learning experiences (Luecking & Gramlich, 2003). Of particular importance for youth with

intellectual disabilities are opportunities to practice employment skills in real work settings.

5. Instruction and experiences that prepare youth for independent living. By the nature of their disabilities, youth with intellectual disabilities experience limitations in adaptive behavior, including conceptual skills, social skills, and practical skills related to activities of daily living (AAIDD, 2010). To address these limitations, it is important that transition-focused education include instruction in independent living skills through the use of functional life skills curricula (Bouck, 2004). Teaching these skills in real-life settings through community-based instruction promotes generalization to natural settings, exposes individuals to new experiences, and provides opportunities to practice social skills and other skills necessary for community participation (Wehman, 2006). However, a balance must be found between functional and academic curricula (Spooner, Dymond, Smith, & Kennedy, 2006).

6. General education participation and inclusion. Youth with intellectual disabilities are more likely to achieve successful postschool outcomes such as community participation and competitive employment integrated settings when they receive transition services in integrated settings (Greene, 2009). Educating youth with intellectual disabilities in inclusive settings is important for two reasons. First, youth need opportunities to develop and practice social interaction skills and develop friendships (Greene). It is therefore important to ensure that youth with intellectual disabilities are provided with opportunities to interact with same-age peers throughout their time in high school. For youth up to age 18, these opportunities can be found through inclusion in general education classrooms. However, as same-age peers typically

graduate from high school at age 18, opportunities must also be provided for youth with intellectual disabilities who are older than 18 but still receiving special education services to interact with peers outside of the school setting. Many school districts and colleges now offer transition programs based on college campuses or in other community settings for youth with intellectual disabilities (Neubert & Moon, 2006). Providing transition services on college campuses allows for age-appropriate inclusion after peers without disabilities graduate from high school at age 18 (Fisher & Sax, 1999), provides an opportunity for community-based instruction (Grigal, Neubert, & Moon, 2001), and promotes high expectations for continuing education for youth with intellectual disabilities (Stodden & Whelley). Although these opportunities may not yet be widespread (Papay & Bambara, 2011), recent legislation has provided support for expansion of these programs through model demonstration programs (Lee, 2009).

The second rationale for inclusion is that providing access to the general education curriculum promotes high expectations for youth with intellectual disabilities (Johnson, Stodden, Emanuel, Luecking, & Mack, 2002) and increases the likelihood of graduating with a standard high school diploma (Stodden, Galloway, & Stodden, 2003). Youth who have a goal of postsecondary education need academic preparation in order to be able to take minimum competency and other tests required for entrance into postsecondary education institutions (Wehman, 2006). The extent to which academic preparation should be emphasized over vocational or functional life skills will depend on the goals of the youth (Wehman). However, appropriate accommodation strategies must be implemented to ensure meaningful participation in academic classes is achieved (Flexer & Baer, 2008).

7. Interagency involvement and collaboration. As youth with intellectual disabilities will require ongoing supports in adult life to access work, postsecondary education, and other community environments, it is critically important that representatives from adult service agencies are involved in transition planning. Through a collaborative approach to transition planning, schools and agencies can share their expertise and combine resources to ensure a seamless transition to adulthood (Crane, Gramlich, & Peterson, 2004). Collaboration between schools and other agencies can occur on many levels, including individual, school-based, community, regional, or state-level transition planning (Blalock, 1996).

These seven practices form what is currently regarded as best practice in transitioning youth with intellectual disabilities. In addition to these individual-level practices, a number of school- or state-level practices are recommended, such as business and industry linkages with schools (Greene, 2009), systems change strategies (Flexer & Baer, 2008), and ensuring qualified personnel and adequate resources (Kohler & Field, 2003). However, the focus of this review and study is on variables that can be changed at the individual-student level. As such, broader recommendations for change are not considered. In the next section, evidence that supports use of these recommended individual-level best practices is reviewed and critically examined.

Evidence for Best Practices

In a review of the research on recommended practices for transition, Kohler (1993) described the transition research as, "an area where no hard, scientific evidence, obtained through rigorously controlled experiments exists" (p. 116). As no empirical evidence demonstrating the effectiveness of recommended practices for improving

postschool outcomes was found, the research reviewed by Kohler consisted primarily of implied effectiveness or social validation. Kohler concluded that the practices of vocational training, paid work experiences, parent involvement, interagency collaboration, social skills training, individualized transition planning, and placement in inclusive environments "constitute desirable components of transition programs and….now must be subjected to empirical validation" (p. 116). Almost 20 years later, a review of the literature conducted by Landmark, Ju, and Zhang (2010) designed to compare the current state of the research with the findings by Kohler (1993) found little change in the practices that have been researched . Similarly, a review of the transition literature designed to identify evidence-based practices conducted by researchers at the National Secondary Transition Technical Assistance Center (NSTTAC; Test, Fowler, et al., 2009) found that, although there is some empirical support in the form of improvements in skill levels for a number of recommended practices, no studies have yet documented the effect of these practices on postschool outcomes. As with Kohler sixteen years earlier, Test, Fowler, et al. (2009) concluded that research is still needed to document the effectiveness of these practices for improving postschool outcomes.

Several studies have examined the perspectives on youth and parents regarding the transition to adulthood. This type of research has demonstrated that many of the recommended best practices are valued by transition stakeholders. Parents of youth with intellectual disabilities have reported that they were very involved in the transition of their child, but have also indicated that they needed more information and a greater degree of collaboration with schools and other agencies to make this transition successful (Chambers, Hughes, & Carter, 2004; Cooney, 2002; Hanley-Maxwell, Whitney-Thomas,

& Pogoloff, 1995; Roth, Pyfer, & Huettig, 2007; Rueda, Monzo, Shapiro, Gomez, & Blacher, 2005). Youth with disabilities who were enrolled in postsecondary education have reported that self-determination skills including problem-solving, self-knowledge, goal-setting, and self-management were important for success in postsecondary settings and that these skills needed to be developed from a young age (Thoma & Getzel, 2005). Youth with disabilities have also indicated that transition planning was helpful for achieving postschool outcomes, particularly independent living (Colley & Jamison, 1998). Parents of youth with intellectual disabilities have reported that preparation for employment was important in the transition to adult life (Hanley-Maxwell et al., 1995; Rueda et al., 2005), a finding that was also supported by studies of the perspective of youth with all disabilities (Colley & Jamison, 1998; Fourqurean & LaCourt, 1990; Mithaug et al., 1985). However, parents of youth with intellectual disabilities have also reported that instruction in independent living skills in addition to employment skills would be important for adult life (Hanley-Maxwell et al., 1995; Rueda et al., 2005).

Through these studies, parents and youth with disabilities, including parents of youth with intellectual disabilities, have reported that the recommended best practices for transition were helpful or would have been helpful for improving postschool outcomes. This is an important first step for identifying variables that are important to change or maintain in school programs. However, this type of research does not address what actually made a difference in postschool outcomes. As participants are asked to speculate on what may have made a difference, and as perspectives may be faulty, no implication of causality can be made based on the findings of this type of study (Isaac & Michael, 1997). Although the perspectives of parents and youth are important for social validation

of recommended best practices, the studies provided no evidence that best practices in transition are actually associated with successful postschool outcomes.

So what evidence exists in support of the association between recommended best practices and postschool outcomes? A substantial body of research has used nonexperimental quantitative methodology (e.g., correlational or comparative research designs) to examine the associations between receiving school program variables (variables that are indicators of the recommended best practices) and measured postschool outcomes. Nonexperimental quantitative research is a useful method for educational research when it is not feasible to manipulate independent variables (Johnson, 2001), as is the case with the examining the transition to adult life. In the next section, a comprehensive review of the nonexperimental quantitative research is conducted. The purpose of this review is to identify which school program variables have been found to have a relationship with postschool outcomes. As factors other than school program variables are also proposed to affect the success of transition (e.g., the characteristics of youth or families), a second purpose of the review was to identify individual, family, and school characteristics that have been controlled for and found to be associated with postschool outcomes in the studies included in the review. To identify articles and reports for this review, the following procedures were utilized.

An extensive search of the literature was conducted using numerous approaches. An electronic search of the PsycInfo and ERIC databases was performed using the search terms “intellectual disabilities,” “mental retardation,” “disabilities,” and “transition.” Articles and reports were also identified through reference lists and forward citation searches of comprehensive reports of transition best practices (e.g., Bambara, Wilson, &

McKenzie, 2007; deFur, 2003; Flexer & Baer, 2008; Greene, 2009; Johnson et al., 2002; Kohler & Field, 2003; Patton, 2004; Phelps & Hanley-Maxwell, 1997; Wehman, 2006). Reports from the NLTS and NLTS2 were identified using the Education Resources Information Center and NLTS2 websites. This initial search located over 400 references. Next, only articles and reports that examined the effect of school program variables either for all youth with disabilities or specifically for youth with intellectual disabilities on postschool outcomes were included. Articles and reports were excluded if they (a) focused only on youth with other specific disabilities, such as learning disabilities or emotional/behavioral disorders, (b) focused solely on factors other than individual-level transition program variables, such as school-level or state-level policies, or unalterable variables such as youth characteristics, (c) did not include participants who were of transition age (i.e., up to 21), and (d) only assessed the effect of practices on in-school outcomes and not postschool outcomes. Studies had to be published in English and consisted of articles published in peer-reviewed journals, unpublished dissertations, and reports using NLTS and NLTS2 data published through ERIC.

After application of these criteria, 33 studies were included in the review. These studies were categorized into two types according to research design. The terms *correlational* and *comparative* that are used to describe these two categories align with McMillan (2008). The first category included studies that used correlational research designs to identify significant predictors of postschool outcomes. Types of analyses used in correlational studies included multiple linear regression, logistic regression, correlated factor analysis, generalized estimating equations, and examination of bivariate correlations. The second category included studies that used comparative research

designs to examine differences in postschool outcomes between groups based on whether youth received or did not receive best practice school program variables. Types of analyses used in comparative studies included chi-square tests, ANOVA, and cross-tabulation to compare groups within the sample, or comparison of outcomes of youth who participated in a particular program to youth in the NLTS. Across the two categories, studies identified both school program variables that were associated with postschool outcomes as well as other factors, such as individual and family characteristics, that were associated with postschool outcomes. In the following sections, a review of studies and findings regarding school program variables and other factors that are associated with postschool outcomes in each of these categories is provided. A description of the type of study, sample, analysis, school program factors identified as predictors, other factors identified as predictors, and postschool outcomes measured in each study is provided in Appendix A.

Findings.

Correlational research. The first category of studies reviewed used correlational methodology to identify predictive relationships between school program variables and postschool outcomes. These studies used statistical analyses to determine whether significant relationships existed between variables through methods including multiple linear regression, logistic regression, correlated factor analysis, generalized estimating equations, and examination of bivariate correlations. Numerous other variables, such as individual and family characteristics, were controlled for in these analyses. Twenty five studies were located that looked for significant predictors of postschool outcomes for

youth with disabilities. Of these studies, 11 used data from the NLTS or NLTS2 and 14 used data from other sources. Findings are separated here by data source.

NLTS and NLTS2. Eleven studies were located that used correlational methodology to identify predictive relationships between school program variables and postschool outcomes using data from either the NLTS or the NLTS2. Only one study examined predictive relationships for a sample of solely youth with intellectual disabilities (Cameto, 1997). The sample in this unpublished dissertation consisted of youth with mental retardation who had participated in the NLTS and were up to 3 years out of high school (n = 221). Outcomes that were measured in predictive analyses included two employment outcomes (current employment status and wages); four social integration outcomes (number of times youth had social contacts in a week; how well youth interacts with others; productive engagement in either employment, postsecondary education, job training , or raising children; and whether youth were raising children); and three independent living outcomes (using community resources; financial management as indicated by independent use of checking and savings accounts and credit cards; and independence of current living situation). A separate analysis was conducted for each dependent variable using either logistic regression for dichotomous dependent variables or linear regression for continuous dependent variables. Separate analyses were conducted for each group of predictor variables. The variables in each group included four school program variables (percentage of time spent in regular education, hours of life skills instruction received, job training, and vocational education), five individual and family characteristics (ethnic minority, gender, level of mental retardation, family income, and single parent household), and three school achievement variables (overall

GPA; number of days absent; and high school completion status, a variable that indicates whether youth completed high school with a regular diploma or dropped out). In the analyses of school program variables, percentage of time spent in regular education was found to be a significant predictor of employment, productive engagement, and use of community services. Hours of life skills instruction was found to be a significant predictor of employment and financial management outcomes. However, hours of life skills instruction was also found to be negatively associated with use of community resources. Job training and occupational vocational education were not found to be significant predictors of any outcomes. Other characteristics that were found to be significant predictors were ethnicity (minority youth were more likely to be parenting and less likely to be employed, be independent in financial management, and get along well with others than white youth), gender (females were more likely to be productively engaged and socially involved than males), level of mental retardation (youth with mild mental retardation were more likely to be productively engaged and use community services independently but less likely to be socially involved than youth with moderate mental retardation), family income (youth from families with high income had higher financial management but lower use of community resources than youth from families with low income), high school completion (youth who dropped out were less likely to be productively engaged), and school attendance (youth with more days absent had lower financial management skills and a lower level of independence on the residential living scale). Additionally, overall grade point average (GPA) was a significant predictor of productive engagement, with higher GPA associated with lower productive engagement. Cameto (1997) explained that this may be due to the placement of students with mild

mental retardation in general education classes, in which they achieved lower GPA than students with moderate mental retardation placed in special classes. Although full regression models were analyzed with all predictor variables for each outcome measure, a high degree of missing data meant that the results of these analyses were unreliable and therefore the results are not included in this review.

The remaining 10 studies used samples consisting of youth with all types of disabilities. Three of these studies used NLTS data to examine predictors of independent living outcomes for youth with all disabilities (Heal, Rubin, & Rusch, 1998; Heal & Rusch, 1994; Sun, 2007). The NLTS employed a longitudinal design, with data collected for all participants in three waves (i.e., three points in time: 1985, 1987, and 1990). In the studies by Heal et al. (1998) and Heal and Rusch (1994), independent living was measured using a scale that ranked living situations according to perceived independence (for example, the least independent living situation was a jail or prison and most independent was living alone). To develop this scale, residential types identified in the NLTS were placed on a scale of residential independence that had been previously created based on rankings of estimated independence given to types of living situation given by numerous authors of papers on residential independence. This produced a continuous dependent variable for the independent living outcome. In the first study (Heal & Rusch, 1994), data were taken from NLTS Waves 1 and 2 for 2,686 participants who were up to 2 years out of high school. In the second study (Heal et al., 1998), data were taken from NLTS Waves 1, 2, and 3 for participants who were up to 4 years out of high school. In both studies, a number of characteristic variables were entered into a multiple linear regression model before school program variables including percentage of

time spent in regular education classes, work-study experience in high school, and work experience in high school (Heal et al., 1998) and number of hours spent in vocational education, number of hours in academic courses, number of hours in occupational training, number of hours in life skills courses, and percentage of hours spent in regular education (Heal & Rusch, 1994). The results of both studies suggested that only characteristic variables and no school program variables were significant predictors of independent living. Heal et al. (1998) found that higher adaptive behavior ratings, higher IQ, and having a milder disability were associated with greater independence and that having mental retardation was associated with lower independence. Heal and Rusch (1994) found positive associations between age and cognitive ability and independent living and negative associations between number of siblings, severity of disability, use of specialized transportation, and problem behaviors and independent living. Extending these two studies, Sun (2007) examined whether inclusion in general education predicted independent living for youth in the NLTS. In this study, living independently at the time of Wave 3 data collection was designated as the outcome of interest. Although this outcome was a binary variable (independent or not independent), it is not clear how this variable was defined or measured. As an indicator of inclusion in general education, number of hours spent in academic classes was entered into a probit regression analyses along with several characteristic variables. Number of hours spent in regular classes was found to be a significant predictor of independent living. Additionally, parent education level, number of siblings, IQ, and receiving a high school diploma were all positively associated with independence, and gender (being male) and ethnicity (being nonwhite) were negatively associated with independence.

Quality of life was the outcome of interest in two studies (Heal, Khoju, & Rusch, 1997; Heal, Khoju, Rusch, & Harnisch, 1999). In the first study (Heal et al., 1997), data from NLTS Waves 1 and 2 for 713 participants with disabilities who were up to 2 years out of high school were analyzed. Variables in the NLTS that corresponded with quality of life indicators were used to develop composite scores for three quality of life domains: esteem, independence, and support. The Esteem score was based on six indicators including employment and postsecondary education. The Independence score was based on five indicators including independent living skills. The Support score was based on six indicators including family support and using community services. A hierarchical linear regression analysis was conducted for each of these three outcome measures, with individual, family, location, and school variables entered first followed by four school program variables (percentage of hours spent in regular education, number of hours spent in vocational education, number of hours in academic courses, and number of hours in occupational training). In this analysis, school program variables accounted for about 5% of the variance in each quality of life domain. Percentage of time spent in regular education was the only significant predictor of quality of life, demonstrating a positive association with Esteem and Independence and a negative association with Support. Family and location variables accounted for about 5% of the variance in each quality of life domain, and individual characteristics accounted for an additional 20-40% of variance in each domain. As the three outcome measures were highly correlated, a canonical correlation analysis was conducted to find a linear combination of the predictors that had the highest correlation with a linear combination of the outcome measures. The results of this analysis suggested that a canonical variable labeled

Competence (characterized by high scores on the Esteem and Independence measures and low scores on the Support measure) was predicted by having a mild disability, higher IQ, and attending an integrated school program. The authors suggest that although this finding may imply that quality of life is defined solely by competence, it may also be an artifact of the limited variables available in the NLTS that can be used as indicators of quality of life. In the second study, data from NLTS Waves 1, 2, and 3 were analyzed for 505 participants with disabilities who were up to 4 years out of high school. Variables in the NLTS were again selected to correspond with three quality of life domains in order to create composite measures. In this study, the quality of life composite measures were Social relationships (which was weighted heavily on frequency of contacts with friends), Employment (which was weighted heavily on hours worked and annual income), and Independence (which was weighted heavily on community living skills, adaptive behavior skills, and ratings of independence). A hierarchical linear regression analysis was conducted similar to the previous study, but with percentage of hours spent in regular education, whether youth had work-study experience in high school, and whether youth had work experience in high school entered as the school program variables. In this analysis, school program variables did not account for a significant amount of variance in each quality of life domain; however, percentage of time spent in regular education was a significant predictor of Employment and Independence. Family and location characteristics also did not account for a significant amount of variance in each domain, and individual characteristics accounted for only about 5-7% of variance. Furthermore, IQ was found to be a significant predictor of Independence but not Social relationships or

Employment. The authors again note the challenge of selecting indicators of quality of life from the NLTS, which was not designed to measure quality of life outcomes.

In one study (Heal & Rusch, 1995), employment was the outcome of interest. Data from NLTS Waves 1 and 2 for 2,405 youth with disabilities who were up to 2 years out of high school were analyzed. Employment was measured using a scale of level of employment, with scores of 0 indicating no employment or sheltered employment, 1 indicating part-time integrated employment, and 2 indicating full-time integrated employment. Similar to other studies by Heal and colleagues, hierarchical linear regression was conducted with characteristics entered into the model first, followed by school program variables. In this analysis, number of hours in vocational education courses, academic courses, and occupational training, and percent of hours spent in regular education classes were the school program variables of interest. However, none of these school program variables were found to be significant predictors of employment. Individual characteristics were the strongest predictors of employment. In particular, household income, gender (being male), intelligence, self-care skills, receiving a high school diploma, and independent living skills were positively associated with employment, and receiving public aid, using specialized transportation, and severity of disability were negatively associated with employment.

In one study (Miceli, 2008) postsecondary education was the outcome of interest. This was also the only study to use data from the NLTS2. Although several research questions were targeted in this unpublished dissertation, the analysis of school program variables and other factors that predicted participation in postsecondary education is the focus of this review. Participants included youth in the NLTS2 who were up to 4 years

out of high school. Postsecondary education was defined as the dichotomous variable: enrolled or not enrolled in postsecondary education at a 2-year or 4-year college. Logistic regression was used to identify significant predictors of postsecondary education. As missing data increased with the addition of more predictors in the analysis, five separate models, each with an increasing number of predictors, were analyzed. Model 1 *(n* = 2,910) included five characteristic variables. Model 2 (*n* = 2,600) included seven characteristic variables. Model 3 (*n* = 2,500) included 11 characteristic variables. Model 4 (*n* = 1,620) included 12 characteristic variables. Model 5 (*n* = 450) included 12 characteristic variables and eight school program variables. In this final model, postsecondary education was predicted by taking a leadership role in transition planning, participation in vocational education, and having met with teachers to discuss postsecondary education goals. Although the characteristics found to be significant predictors of postsecondary education varied across the five models (see Appendix A for a full review), several characteristics were found to be significant predictors in the final model , including household income, race/ethnicity (being Hispanic), cognitive functioning skills, parent education, participation in extra-curricular activities, grades, and high school completion.

In one study (Blackorby, Hancock, & Siegel, 1993), the outcome of interest was a latent variable of postschool success. This conference paper used data from NLTS Wave 1 to examine postschool outcomes for 939 youth with disabilities who were up to 2 years out of high school. The latent construct of postschool success was indicated by six measured variables: employment status, postsecondary education, wages, independent living status, degree of social interaction, and having trouble with the law. A latent

construct for school programs was indicated by having taken academic classes in regular education settings, percent of time spent in mainstream settings, received tutoring or other academic support, received occupational therapy or life skills instruction, and vocational education. A correlated factor analysis was conducted to identify predictive relationships between school programs (as well as other latent constructs for characteristics) and postschool success. The school program construct was found to be significantly correlated with postschool success. Significant indicators that had a positive correlation with this construct were percentage of time spent in regular education and taking academics in regular education. Indicators that had a negative correlation with postschool success were receiving occupational therapy or life skills training. Other latent constructs that had significant positive correlations with postschool success were individual characteristics (IQ and self-care skills), family characteristics (employment, education, and income of head of household, one-or two-parent household), and school characteristics (average daily attendance of school, availability of compensatory education programs). Two indicators of the school characteristics latent variable (percentage of students from low income families and percentage of special education students) were negatively correlated with postschool success. However, the model did not fit the data very well.

The final two studies in this category were comprehensive reports of data from the NLTS that examined multiple outcomes (Hebbeler, 1993; Wagner, Blackorby, Cameto, & Newman, 1993). The purpose of the report by Hebbeler (1993) was to examine participation in regular education of youth with disabilities in the NLTS and to determine whether this school program variable predicted postschool outcomes. Youth in

this report (n = 1,888) were up to 3 years out of high school. Percentage of time spent in regular education was found to be a significant predictor of having current competitive employment, wages, and community participation (a composite measure engagement in postsecondary education or work, independent living, and social involvement) but not a significant predictor of enrollment in an academic or vocational postsecondary education program. The purpose of the report by Wagner et al. (1993) was to provide a comprehensive examination of factors that influence postschool outcomes of youth with disabilities using all data from the NLTS. Outcomes in this study included postsecondary education (enrollment in academic or vocational postsecondary education at any time since leaving high school), current employment (having a paid job and annual salary), independent living (living alone and not as a dependent), and community participation (a composite measure including productive engagement in postsecondary education or employment, independent living, and social activities. High and low community participation profiles served as dependent variables in analyses). Multiple linear and logistic regression analyses were conducted, depending on the nature of the dependent variable of interest. Parent involvement, having a transition planning goal for postsecondary education, and school contacts for postsecondary education were all found to be significant predictors of postsecondary education outcomes. Time spent in regular education and vocational education were significant predictors of employment outcomes. Parent involvement, time spent in regular education, and vocational education were all significant predictors of higher community participation. No school program variables predicted independent living. Additionally, work experience in school was not found to be a significant predictor of any outcomes. Several characteristics were also found to be

significant predictors of postschool outcomes. Characteristics that were positively associated with postsecondary education were household income, being from a single parent family, parent expectations, and high school completion. Having parenting responsibilities was negatively associated with postsecondary education. Characteristics that were positively associated with employment included self-care skills, gender (being male), and household income. Being female, African American, or being a mother was associated with lower employment outcomes. Characteristics that were positively associated with independent living included functional mental skills (a measure of the ability to perform four functional academic tasks, such as tell time or read signs), gender (being male), and having parenting responsibilities. Being African American or Hispanic was associated with less independence. Finally, parent expectations and high school completion were positively associated with community participation, whereas being African American was negatively associated with community participation,.

Other sources. The 14 studies that used data from other sources included evaluations of national (Harvey, 2002; Shandra & Hogan, 2008), state-level (Baer et al., 2003; Benz, Yovanoff, & Doren, 1997; Doren & Benz, 1998; Halpern, Yovanoff, Doren, & Benz, 1995; Kraemer, McIntyre, & Blacher, 2003; Rabren, Dunn, & Chambers, 2002), and school district- or county-level outcome data (Thompson, 1996; White & Weiner, 2004), and evaluations of outcomes from particular programs (Benz, Lindstrom, & Yovanoff, 2000; Fabian, Lent, & Willis, 1998; Luecking & Fabian, 2000; Schalock et al., 1986).

Two of these studies examined predictors of postschool outcomes for samples consisting solely of youth with intellectual disabilities (Kraemer et al., 2003; White &

Weiner, 2004). Kraemer et al. (2003) examined predictors of quality of life for 188 youth with moderate or severe mental retardation in California. Of this sample, 85 youth were out of high school, although the length of time for which youth had been out of school was not specified. Quality of life was measured using a Quality of Life Questionnaire (Schalock & Keith, 1993) completed by parents. Dependent variables were the total score for this measure as well as scores on four subscales (Satisfaction, Competence, Empowerment, and Social belonging). Stepwise multiple linear regression analyses were conducted for each of these five dependent variables. All individual, family, and environmental (including school program) variables were entered into the analysis simultaneously. Parent knowledge of adult services (which could be an indicator of parent involvement) was found to be significant predictors of overall quality of life as well as the Competence and Empowerment subscales. Parent involvement in transition planning was found to be a significant predictor of the Competence subscale, and paid work experience in school was found to be a significant predictor of the Social belonging subscale. Additional characteristics that were predictive of overall quality of life included adaptive behavior (higher adaptive behavior scores were associated with higher quality of life scores), size of the youth's social network (larger networks were associated with higher quality of life scores), and parent's perception that the youth had a negative impact of the family (greater impact was associated with lower quality of life). However, the results of this study must be interpreted with caution. Stepwise regression is generally viewed as an undesirable analysis (Thompson, 1995). Stepwise regression involves data-driven selection rather than theoretical specification of the order of entering predictors into the model. This method capitalizes on unique characteristics of the

particular dataset and results may therefore not be generalizable to other samples (Thompson). Additionally, it is not clear whether the sample used for predictive analyses in this study included youth who had not yet left high school. Although quality of life was analyzed separately for these youth in initial descriptive analyses, it would appear that these youth were combined with youth who were out of high school for the predictive analyses. Therefore, results may not be representative of youth who were out of high school.

In the second study in which the sample consisted of youth with intellectual disabilities, White and Weiner (2004) examined the influence of integration with same-age peers and community-based training in transition programs for youth ages 18-21 on postschool outcomes for 104 youth with severe disabilities in Orange County, California. The outcome of interest for this study was level of integrated employment (no job, job in a segregated workshop, or integrated job) immediately following graduation. Correlations between this dependent variable and six independent variables (three characteristics: IQ, having a physical disability, having behavioral challenges; and three school program variables: community-based training, on-the-job training, and integration with peers) were examined. Amount of time spent in community-based training including on-the-job training was significantly correlated with employment. Level of integration with age-appropriate peers (with a college setting defined as the highest level of integration) was also significantly correlated with employment. Individual characteristics were not found to be significantly correlated with employment.

The remaining 12 studies examined predictors of postschool outcomes for samples of youth with all disabilities. Two of these studies used data from national

longitudinal studies similar to NLTS and NLTS2. Shandra and Hogan (2008) examined data from the National Longitudinal Survey of Youth, 1997, which followed youth from their high school years into adult life. A sample of youth with disabilities (*n*=2,254) was drawn from this larger dataset to examine the effect of school-to-work programs on postschool employment. Several employment outcomes were examined including annual income, hourly compensation, part or full time work status, stable employment (defined as having the same job for at least 13 weeks in a year), and receiving health insurance benefits or paid sick days. The length of time for which youth were followed after high school was not specified. A number of components of school-to-work programs were examined, including participation in school-based or work-based work preparation programs, cooperative education (a combination of academic and vocational studies and a job in a related field), school-sponsored enterprise, technical preparation, mentorship (being matched to an individual in an occupation), internship experiences, and job shadowing. As this dataset included continuous dependent variables that were measured annually, the researchers used generalized estimating equations to examine the effect of these school program variables and other characteristics on outcomes and to model change in employment outcomes over time. Participation in a school-based school-to-work program was found to be positively associated with annual income, stable employment, and full-time employment. Cooperative education was found to be positively associated with annual income, full-time employment, and receiving benefits. Participation in school-sponsored enterprise or being a career major were both associated with stable employment. Having mentorship experiences was associated with receiving paid sick days, and having internship experiences was associated with hourly pay. A

number of characteristic variables were associated with employment outcomes, including severity of disability (having more severe disabilities was associated with less favorable outcomes in stable employment, annual income, and hourly pay), gender (being male was positively associated with annual income, hourly pay, full-time employment, and receiving health insurance), race (being Black was negatively associated with annual income, hourly pay, stable employment, and full-time employment; being Black or Hispanic was positive associated with receiving sick days), socioeconomic status (SES; lower SES was associated with less favorable outcomes in annual income, hourly pay, and stable employment), and high school diploma status (having a high school diploma was associated with positive outcomes in all areas).

Harvey (2002) also used data from a national study to examine the effect of preparation for employment on postschool outcomes. This study used data from the National Education Longitudinal Study, 1988-1994, which followed youth from 8th grade into early adulthood. A sample of youth with disabilities (n = 7,007) was drawn from this larger dataset, and outcomes were measured up to 2 years after youth left high school. Outcomes of interest were employment (worked for 1 or more months in 1993, mean annual earnings, average hours worked per week, and job satisfaction) and postsecondary education (participating in any type of postsecondary education). Participation in high school vocational education was the only school program variable examined in this study, although several characteristic variables were controlled for in the analyses. Logistic and multiple linear regression analyses were conducted, depending on the nature of the outcome variable. Vocational education was found to be a significant predictor of employment outcomes; however, participating in vocational education was also found to

be predictive of lower participation in postsecondary education. Characteristics that were positively associated with employment included marital status (being married), gender (being male), and ethnicity (being white). Youth from low SES backgrounds were also more likely to be employed. The urbanicity of the area in which the youth lived was also associated with employment outcomes: youth from urban and suburban areas were more likely to be employed that youth from rural areas, but youth from rural areas were more likely to have job satisfaction. Several factors were negatively associated with postsecondary education outcomes, including having economic responsibility for another person, marital status (being married), and ethnicity (being white). Having a high school diploma and higher SES were both associated with higher enrollment in postsecondary education.

Five studies conducted state-level evaluations of postschool outcomes of youth with disabilities to determine whether school program variables were predictive of postschool success (Baer et al., 2003; Benz, Yovanoff, & Doren, 1997; Doren & Benz, 1998; Halpern, Yovanoff, Doren, & Benz, 1995; Rabren, Dunn, & Chambers, 2002). All five of these studies collected data through follow-up interviews and surveys of parents and youth and all five used logistic regression analyses. Baer et al. (2003) used data from Ohio to examine predictors of current full-time employment and participation in postsecondary education since high school for a sample of 140 youth with disabilities who were between 1 and 3 years out of high school. Vocational education and participation in work-study were found to be significant predictors of employment and participation in regular academics was found to be a significant predictor of postsecondary education. Additionally, attending a rural school or having a learning

disability was associated with a greater likelihood of employment, and attending a suburban school was associated with a greater likelihood of postsecondary education. Benz et al. (1997) analyzed data from Ohio and Nevada to examine predictors of competitive employment (defined as working at least 20 hours a week for at least $4.25 per hour) and productive engagement (defined as being engaged for 12 total months in work half-time or more only, going to school half-time or more only, working and going to school, or participating full-time in the military) for a sample of 218 youth with disabilities who were 1 year out of high school. Having two or more jobs while in the last 2 years of high school was the only school program variable that predicted employment outcomes (although it is not clear if this variable refers to school-sponsored jobs or any jobs that the youth held either in or out of school). No school program variables predicted productive engagement. Other factors that were found to predict employment were gender (being male), high social skills at time of exiting high school, high job search skills at time of exiting high school, and no continuing vocational instruction needs 1 year out of high school. Factors that were found to predict productive engagement were both positively associated (high career awareness skills at exit, no continuing vocational or social instruction needs 1 year out of high school,) and negatively associated (being a minority, having children) with this outcome. Doren and Benz (1998) used data from this same study to further examine factors associated with employment outcomes both for young men and women with disabilities and factors associated uniquely with employment success for young women with disabilities. The outcome variable of interest in this study was competitive employment (defined as in Benz et al., 1997). Again, the only school program variable found to predict employment

was having two or more jobs while in high school, but it is again unclear if this refers only to school-sponsored jobs. Finding a job through the self-family-friend network and being male were also associated with successful employment outcomes. Factors that made a difference uniquely for women were family income (women from low income families were less likely to be employed) and self-esteem (women with low self-esteem were less likely to be employed). The same sample of youth in Oregon and Nevada was also used by Halpern et al. (1995) to examine predictors of postsecondary education (defined as participating in any type of postsecondary education). This sample was combined with a sample of students with disabilities in Arizona to give a total sample size of *n*=987. In this analysis, several school program variables but no demographic variables were found to predict postsecondary education outcomes (a finding that is opposite of Heal et al., 1998; Heal & Rusch, 1994; and Heal & Rusch, 1995). Participation in transition planning; receiving instruction that was identified as needed in the areas of reading, writing, math, problem solving, and getting along with people; and student's satisfaction with high school instruction were positively associated with postsecondary education outcomes. However, inclusion in high school was not found to be a significant predictor of postsecondary education. In the final study that conducted state-level evaluation of outcomes, Rabren et al. (2002) examined predictors of employment status (being currently employed) 1 year out of high school for a sample of 1,393 youth with disabilities in Alabama. Although school program factors were not specifically examined in this study, having a job at the time of exiting school was found to be a significant predictor of postschool employment, perhaps indicating the importance of work experiences in high school. Additional factors that were associated with positive

outcomes included gender (being male), school setting (attending an urban school), disability (having a learning disability), and not being supported by mental health or mental retardation services.

One study (Thompson, 1996) conducted a school district-level evaluation of postschool outcomes for 98 youth with disabilities who had attended Minneapolis Public Schools and were 1 year into adult life. In this unpublished dissertation, several outcomes were identified: employment integration, residential integration, formal support networks, personal satisfaction, and recreational integration. These outcomes were all continuous scales but measurement was not described. Only one school program variable (instruction in independent living in addition to academic and vocational instruction) was found to predict residential integration, and no school program variables predicted the other four outcomes. Gender was found to be a predictor of employment integration, with being male associated with more positive outcomes. Additionally, disability was found to be a significant predictor of employment integration and residential integration outcomes (having a learning disability or emotional/behavioral disorder was associated with more positive employment and residential outcomes than having a developmental disability), and formal support (having a developmental disability was associated with a greater likelihood of receiving formal support).

The remaining four correlational studies all involved program evaluation data. In these studies, the amounts of particular variables that youth received in the programs were examined as predictors of postschool outcomes. Two studies examined data from the Bridges…from School to Work program (Fabian, Lent, & Willis, 1998; Luecking & Fabian, 2000). The Bridges program, developed by the Marriott Foundation and

currently provided at several national sites, involves paid internships in real work settings for youth with disabilities who are in the final year of high school as well as pre-internship training and on-the-job support (Luecking & Gramlich, 2003). Fabian et al. (1998) analyzed data from six national sites for 2,258 program graduates to determine which program variables were associated with engagement in employment or postsecondary education 6 months after exiting from the program. By examining bivariate correlations, completion of the internship and acceptance of a job offer at the end of the internship were found to be significantly correlated with postschool engagement. Luecking and Fabian (2000) analyzed data from seven national sites for 3,024 program graduates to determine which program variables were associated with employment (defined as competitive employment for at least minimum wage) at 6-, 12-, and 18-months after exiting from the program. Logistic regression analyses were conducted for outcomes at each time point with three program variables and several characteristic variables entered as predictors. At 6-months after exiting the program, completion of the internship, accepting a job offer at the end of the internship, and wages during the internship were all predictive of employment. At this time, having a learning disability was the only characteristic that was predictive of employment. At 12-months after exiting the program, completion of the internship and accepting a job offer at the end of the internship were still predictive of employment but wages during internship was no longer a significant predictor. At this time point, youth with emotional disabilities and minority youth were significantly less likely than those with other disabilities or nonminority youth to be employed. At 18-months after exiting the program, no program variables were predictive of employment. Having an emotional disability and minority

status were the only significant predictors of employment at this time. This study suggests that school program variables may only have a short-term effect and emphasizes the importance of examining outcomes more than 1 year out of high school.

One study examined data from the Youth Transition Program (Benz, et al., 2000). The Youth Transition Program is a program offered in almost all high schools in Oregon that supports youth who are in the final 2 years of high school and includes transition planning, instruction in academic, social, vocational, and independent living, support to remain in school, paid job training, assistance in obtaining employment, and follow-up support for up to 2 years after exiting the program. Data from this program for 709 youth with disabilities were analyzed to identify program components that were predictive of engagement in employment or continuing education at the time of exiting the program using a logistic regression analysis. Program variables that were significant predictors of engagement were having two or more paid jobs while in the program and completing four or more transition goals while in the program. No demographic variables were found to be significant predictors of engagement.

The final correlational study that used program evaluation data examined data from a job experience and training model (Schalock et al., 1986). In this model, youth were placed in a community-based job exploration site based on their job interests and were provided with instruction in job skills identified as necessary by employers. This study examined predictive relationships between program variables and postschool outcomes for 108 youth with learning disabilities or mental retardation who were up to 5 years out of high school. Several outcomes were measured including present status (employed, unemployed, attending school, attending a community-based mental

retardation program, or other), current living situation (supervised, semi-independent, or independent), income source (parent or relatives, public, or personal), and a number of employment outcomes (number of jobs, number of months employed, total earnings, hours worked per week, wages per hour, and weeks employed per year). Stepwise multiple regression analyses were conducted for each of these nine outcomes. Level of family involvement was found to be a significant predictor of all outcomes. The number of hours youth spent in vocational programs while in the job exploration program was found to be a significant predictor of a number of favorable employment outcomes including income source, number of months employed, total earnings, hours, wages, and weeks worked per year. Across all outcomes except number of jobs and wages per hour, having a learning disability was associated with more favorable outcomes than having mental retardation.

Summary. These 25 correlational studies have examined all of the recommended best practice school program variables and provided varying degrees of support for each practice. For youth with intellectual disabilities, school program variables that were found to be predictive of successful postschool outcomes include work experiences (Kraemer et al., 2003; White & Weiner, 2004), inclusion in general education (Cameto, 1997; White & Weiner), family involvement (Kraemer et al., 2003), and preparation for independent living through life skills instruction (Cameto) or community-based instruction (White & Weiner). In general, these variables were associated with more successful outcomes, with the exception of vocational education, which was found to be a nonsignificant predictor of employment outcomes (Cameto; Hasazi, Gordon, Roe, & Hull, 1985; Sitlington, 1992) and independent living and social integration outcomes

(Cameto), and life skills instruction, which was found to be negatively correlated with using community resources (Cameto).

For youth with all disabilities, preparation for employment and participation in general education were the most extensively examined practices. Indicators of preparation for employment included work experiences (examined in 10 studies: Baer et al., 2003; Benz et al., 2000; Benz et al., 1997; Doren & Benz, 1998; Fabian et al., 1998; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995; Luecking & Fabian, 2000; Shandra & Hogan, 2008) and vocational education (examined in nine studies: Baer et al., 2003; Harvey, 2002; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995; Miceli, 2008; Schalock et al., 1986; Shandra & Hogan, 2008; Wagner et al., 1993). Indicators of general education participation included hours or percentage of time spent in general education classes or placement in integrated settings (examined in nine studies: Blackorby et al., 1993; Halpern et al., 1995; Heal et al., 1997; Heal et al., 1999; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995; Hebbeler, 1993; Wagner et al., 1993) and taking academic classes (examined in five studies: Baer et al., 2003; Blackorby et al., 1993;Heal & Rusch, 1994; Heal & Rusch, 1995; Sun, 2007). Only a handful of studies examined youth involvement (indicated by taking a leadership role in transition planning in Miceli, 2008), parent involvement (examined in two studies: Schalock et al., 1986; Wagner et al., 1993), transition planning (examined in three studies: Halpern et al., 1995; Miceli, 2008; Wagner et al., 1993), preparation for independent living (indicated by life skills instruction in four studies: Blackorby et al., 1993; Cameto, 1997; Heal & Rusch, 1994; Thompson, 1996), and interagency collaboration (examined in one study: Wagner et al., 1993). In general, all school program variables were found to be

significant predictors of postschool outcomes, although some studies found that vocational education (Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995), work experiences (Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995;Wagner et al., 1993), life skills instruction (Heal & Rusch, 1994), general education participation (Halpern et al., 1995; Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995), and taking academic classes (Heal & Rusch, 1994; Heal & Rusch, 1995) were not significant predictors of postschool outcomes. Furthermore, one study found life skills instruction to be negatively correlated with postschool success (Blackorby et al., 1993), one study found vocational education to be positively correlated with employment but negatively correlated with postsecondary education outcomes (Harvey, 2002), and one study found general education participation to be positively correlated with esteem and independence domains of quality of life but negatively correlated with the amount of support received in adulthood (Heal et al., 1997).

Correlational studies have also provided evidence that factors other than school program variables predict postschool outcomes. In the studies reviewed, factors that predicted postschool outcomes included individual, family, and school characteristics. Three studies found that only characteristics and no school program variables were significant predictors of employment or independent living outcomes (Heal et al., 1998; Heal & Rusch, 1994; Heal & Rusch, 1995). However, the majority of studies found that both characteristics and school program variables were predictive of postschool outcomes. For youth with intellectual disabilities, the most salient individual characteristics that were found to be predictors of postschool outcomes were gender, ethnicity, high school completion, severity of disability, and adaptive behavior. Youth

who were female, nonminority, had mild mental retardation, high adaptive behavior, or had completed high school were found to have significantly better outcomes for employment, social inclusion, and independent living compared to youth who were male or minority, or who had moderate or severe mental retardation, lower adaptive skills, or dropped out or aged out of high school (Cameto, 1997). One exception was found to this pattern, in that youth with moderate mental retardation were found to be more socially involved and use community resources independently than youth with mild mental retardation (Cameto). Additionally, youth with intellectual disabilities who had lower adaptive behavior skills were found to have lower scores on a quality of life index (Kraemer et al., 2003). No family or school characteristics were identified as predictors of outcomes for youth with intellectual disabilities, although few were controlled for in analyses.

For youth with all disabilities, the most salient individual characteristics that were found to predict outcomes were gender, ethnicity, high school completion, disability, functional academic skills or IQ, self-care skills, and adaptive behavior. Males were found to have significantly better employment outcomes in eight studies (Benz et al., 1997; Doren & Benz, 1998; Harvey, 2002; Heal & Rusch, 1995; Rabren et al., 2002; Shandra & Hogan, 2008; Thompson, 1996; Wagner et al., 1993) whereas females were found to be more likely to live independently in two studies (Sun, 2007; Wagner et al.) and more likely to enroll in postsecondary education in one study (Miceli, 2008). Youth who were nonminority were found to experience significantly better outcomes than minority youth in employment (Harvey, 2002; Luecking & Fabian, 2000; Shandra & Hogan; Wagner et al.), independent living (Sun; Wagner et al.), productive engagement

(Benz et al., 1997), and community participation (Wagner et al.). Only one study found more successful outcomes for minority youth than nonminority youth (in postsecondary education enrollment; Miceli, 2008). Youth who had completed high school were found to have better outcomes than youth who had dropped out in the areas of employment (Heal & Rusch, 1995; Shandra & Hogan), postsecondary education (Harvey; Miceli; Wagner et al.), independent living (Sun), and community participation (Wagner et al.). Youth with learning disabilities or youth who had higher functional academic skills or IQ were found to have significantly more successful outcomes than youth with mental retardation or lower functional academic skills or IQ in several areas including employment (Baer et al., 2003; Heal & Rusch, 1995; Luecking & Fabian; Rabren et al.; Schalock et al., 1986; Shandra & Hogan; Thompson), postsecondary education (Miceli), independent living (Heal et al., 1998; Heal & Rusch, 1994; Schalock et al.; Sun; Thompson), quality of life (Heal et al., 1997; Heal et al., 1999), and general postschool success (Blackorby et al., 1993). Youth with higher levels of self-care or adaptive behavior skills were found to have significantly better outcomes in employment (Heal & Rusch, 1995; Wagner et al.) and independent living (Heal et al., 1998).

Family characteristics that were found to be significant predictors of outcomes included parent education, parent employment, family income, and parent expectations. Youth from higher-income families and who had parents with higher levels of education or who were employed were found to have significantly more favorable outcomes in employment (Doren & Benz; Harvey; Heal & Rusch, 1995; Shandra & Hogan), postsecondary education (Harvey; Miceli; Wagner et al.), independent living (Sun), and general postschool success (Blackorby et al.). Parent expectations that the youth would

attend postsecondary education was found to be a significant predictor of enrollment in postsecondary education (Miceli; Wagner et al.), and parent expectations that the youth would live independently was found to be a significant predictor of independent living (Wagner et al.).

The most often examined school characteristic was urbanicity of the school attended by the youth. Youth who had attended urban schools were found to be more likely to be employed than youth who attended rural or suburban schools in two studies (Harvey; Rabren et al.), yet youth who attended rural schools were found to be more likely to be employed in one study (Baer et al.). Youth who attended suburban schools were found to be more likely to enroll in postsecondary education than youth in urban or rural schools in one study (Baer et al.).

The correlational studies reviewed provide some of the strongest support for the recommended best practices in transition. Correlational research is a useful method for studying complex variables that cannot easily be examined through experimental methods and is particularly useful for assessing relationships between several variables in real-life settings (Isaac & Michael, 1997). Although experimental or quasiexperimental studies would provide stronger evidence in support of the recommended best practices, correlational studies provide the strongest nonexperimental support because the effects of combinations of multiple variables on outcomes are examined. However, there are several limitations both with this method and with the particular studies reviewed. In regards to correlational methodology, the primary limitation is that correlation does not identify a causal relationship (Isaac & Michael). As there is minimal or no control over the independent variables, these studies are less rigorous than experimental studies.

Furthermore, use of correlational methodology as a way to explore relationships between variables can produce unreliable findings and identify relationships that have no interpretable meaning (Isaac & Michael). Indeed, stepwise regression, a method which is generally considered unadvisable as it capitalizes on chance and tends to produce findings that are not replicable (Thompson, 1995), was used in two of these studies (Kraemer et al., 2003; Schalock et al., 1986). In regards to the correlational studies on best practices in transition, three limitations are identified. First, only three studies examined relationships between school program variables and postschool outcomes for a sample of youth with intellectual disabilities (Cameto, 1997; Kraemer et al., 2003; White & Weiner, 2004). Results of studies using data from all youth with disabilities are useful for identifying school program variables that may be associated with postschool outcomes, the variables identified may have limited generalizability to youth with intellectual disabilities. Second, studies using NLTS and NLTS2 data were almost all conducted using NLTS data which was collected before transition planning became a required service under IDEA, and as such, do not reflect the reality of transition experiences of youth today. For example, youth involvement was not examined at all in the NLTS studies and almost all of the NLTS studies examined employment rather than other valued outcomes. Third, although several studies using other data were more recent, the lack of a national perspective may limit the findings to the states or localities in which they were conducted. These limitations suggest the need for caution when generalizing findings to all youth with intellectual disabilities who are currently transitioning from school to adult life.

Comparative research. The second category of studies reviewed used comparative methods to examine differences in postschool outcomes between groups that received or did not receive school program variables. Analyses used in studies in this category included chi-square tests, ANOVA, and cross-tabulation to compare groups within the sample, or comparison of outcomes of youth who participated in a particular program to youth in the NLTS. Eight studies were located in this category. Outcome data that were analyzed included state-level data in two studies (Colley & Jamison, 1998; Sitlington et al., 1992), county or school district-level data in two studies (Hasazi, Gordon, & Roe, 1985; Hasazi, Gordon, Roe, & Hull, 1985), city-level data in one study (DiGiacomo, 2002), and program evaluation data in three studies (Aspel, Bettis, Test, & Wood, 1998; Luftig & Muthert, 2005; Zafft, Hart, & Zimbrich, 2004).

Two of these eight studies analyzed samples consisting solely of youth with intellectual disabilities (Hasazi, Gordon, Roe, & Hull, 1985; Zafft et al., 2004) and one study included youth with other disabilities but analyzed results separately for youth with intellectual disabilities (Sitlington et al., 1992). In the state-level evaluation conducted by Hasazi, Gordon, Roe, and Hull (1985), outcome data for 243 youth with mental retardation who had attended 17 special class programs across Vermont were analyzed. The outcome variable of interest was whether the youth was currently employed and whether the youth earned more or less than $3.35 in the current job. School program variables of interest were vocational education, work experience, and having a part-time or summer job during high school. Data were analyzed by presenting the percentages of youth who were employed and who either received or did not receive each school program variable (e.g., percentage of youth who were employed and had vocational

education and percentage of youth who were employed and did not have vocational education) followed by chi-square tests to identify significant differences in proportions of youth employed who received or did not receive each variable. Significantly more youth were employed if they had received vocational education or had a part-time or summer job in high school. No difference in the proportion of employed youth was found for work experiences. Significantly more youth earned about $3.35 an hour if they had received vocational education, work experience, or had a part-time job outside of high school. Having a summer job in high school was not associated with a significant difference in wages. Additional factors that were associated with current employment were gender and disability: males and youth with less severe disabilities were more likely to be employed than females and youth with more severe disabilities. In the program evaluation study conducted by Zafft et al. (2004), outcomes for youth with intellectual disabilities who had participated in an inclusive college experience during high school were compared to outcomes of youth with intellectual disabilities who had participated only in school-based transition experiences. The College Career Connection project involved individualized opportunities for youth with intellectual disabilities ages 18 to 22 from five school districts in Massachusetts to participate in post-secondary education experiences at local community colleges while still enrolled in high school. The key elements of the program included age-appropriate inclusive college experiences, individualized transition planning, and interagency collaboration. The outcomes of interest were whether youth had achieved competitive or sheltered employment and whether youth continued to need vocational supports, although the length of time youth were out of school when these variables were measured was not specified. A chi-square

test was conducted to determine whether there were differences in outcomes for 16 youth who participated in this program compared to 20 youth who participated only in transition programs at their high schools. A significantly higher proportion of program participants were competitively employed and no longer needed vocational supports that youth who did not participate in this program, suggesting that the three school program variables that were key elements of the project may be associated with more successful employment outcomes.

In the state-level evaluation conducted by Sitlington et al.(1992), outcome data for 2,476 youth with learning disabilities, behavioral disorders, and mental disabilities in Iowa who had been out of high school for 1 year were analyzed. Results were analyzed separately for youth in each disability category; therefore results can be interpreted for youth with intellectual disabilities (referred to as mental disabilities in this study). The outcome variable of interest was whether the youth was currently employed, although the length of time for which participants had been out of school was not specified. School program variables of interest were general or specially designed vocational training, work experience in high school, and having a paid job in high school. To identify factors associated with the postschool outcome, school program variables were presented in a cross-tabulation with current employment status (e.g., Had or did not have work experience in school and employed or not employed presented in a 2x2 table), then chi-square tests were conducted to identify significant differences in proportions between the employed or not employed groups based on receiving each school program variable. No significant differences in employment outcomes were found for youth with mental disabilities (or other disabilities) who received or did not receive vocational training or

work experience. A significantly higher proportion of youth with mental disabilities who had a paid job in high school were employed than youth who did not have a paid job in high school, although it is not clear if having a paid job refers to a school-sponsored job or a job held outside of school. Additionally, gender and disability were both associated with the employment outcome: a higher proportion of females were unemployed than males, and a higher proportion of youth with mental disabilities were unemployed than youth with learning disabilities.

The remaining five comparative studies involved samples of youth with all disabilities. One study (Colley & Jamison, 1998) conducted a state-level evaluation of outcomes for 720 youth with disabilities in New York. Outcomes measured when youth were 9 months out of high school were whether the youth was currently employed, in full-time employment, paid at least $4.25 an hour, receiving employment benefits, satisfied with the job, and had worked most or all of the time since high school. School program variables of interest were work experience in high school and occupational education. To identify whether these variables were associated with differences in employment outcomes, cross-tabulation was used (e.g., percentage of youth working full time who had or did not have work experience in school). Results were then analyzed descriptively rather than through statistical tests. Across all employment outcomes, a higher percentage of youth who had took occupational education or had work experiences were employed than youth who had not received these school program variables.

One study (Hasazi, Gordon, & Roe, 1985) conducted a school district-level evaluation of outcomes for 462 youth with disabilities who had attended nine school districts in Vermont. The outcomes of interest were whether the youth was currently

employed, the wages earned in the current job, and the percentage of time employed since high school, although the length of time for which youth had been out of school was not specified. This study examined the same school program variables and employed the same analysis methods as those used by Hasazi, Gordon, Roe, and Hull (1985). Vocational education was found to be significantly associated with current employment but not significantly associated with wages or percentage of time employed since high school. Work experiences were not associated with any outcomes. However, having a summer job during high school was associated with all three outcomes and having a part-time job during high school was associated with current employment and percentage of time employed since high school. Higher proportions of youth who attended an urban school, were male, had been placed in a resource room in high school, and completed high school were currently employed than youth who attended rural schools, were female, had been placed in segregated classrooms, and did not complete high school. Additionally, higher proportions of males and youth placed in resource rooms had been employed for greater amounts of time since high school than females or youth placed in segregated classrooms. No characteristics were found to be significantly associated with wages.

One study (DiGiacomo, 2002) conducted a city-level evaluation of outcomes for 100 youth with disabilities in Philadelphia. The outcome of interest in this unpublished dissertation was the level of vocational success achieved by youth who were between 1 and 7 years out of high school. Eleven potential outcomes were identified (e.g., working 40 hours per week, working 20-39 hours per week, current enrollment at 4-year college, and so on) and were weighted according to level of vocational success as determined by

rankings of professionals in the field. As youth could achieve more than one outcome, the weighted points for each outcome achieved by a youth were added together to give a vocational success score. This produced a dependent variable with scores between 0 and 14. The school program variables of interest were inclusion across the youth's school career (elementary, middle, and high school combined) and in high school, as indicated by the percentage of time spent in regular education (rated as low, moderate, high-moderate, or high). Data were analyzed using ANOVA with level of inclusion as the independent variable. Higher vocational success scores were found for youth who had higher levels of inclusion in high school but not for higher levels of inclusion across the youth's school career. The effect of work experience was also examined as was found to be significantly associated with vocational success.

In the remaining two studies that analyzed differences in outcomes for youth with all disabilities (Aspel et al., 1998; Luftig & Muthert, 2005), school program variables that were associated with successful postschool outcomes were identified by comparing outcomes of a particular program to outcomes of youth with disabilities in the NLTS. Aspel et al. (1998) evaluated outcomes for youth with disabilities who had received transition services through the Teaching All Students Skills for Employment and Life (TASSEL) transition model developed in North Carolina. This model was designed to provide comprehensive programming for transition and key elements included either an academic or occupational course of study, individualized transition planning, and parent involvement. In this evaluation study, outcomes were measured at 6-months (n = 27), 18-months (n = 66), and 30-months (n = 27) out of high school for youth who received transition services through this model in two school districts. Outcomes of interest that

were compared to outcomes for youth with disabilities in the NLTS included whether youth were competitively employed, earned above $5 an hour, had enrolled in postsecondary education, were living somewhere other than with parents, belonged to a community group, or had a hobby. Outcomes were compared descriptively to reported outcomes provided by Blackorby and Wagner (1996) and Wagner et al. (1993). Greater percentages of youth who had participated in this program achieved these postschool outcomes than percentages of youth reported in the NLTS, suggesting that the key elements of this model may be associated with postschool success. In a similar study, Luftig and Muthert (2005) examined outcomes for 36 youth with mild mental retardation or learning disabilities who had participated in an inclusive program at a vocational-technical center (results were not presented separately for these two disability groups). Key elements of this program were vocational education and inclusion in general vocational classes. Outcomes of interest were whether youth were employed or receiving health or other benefits and the hourly wages earned by youth who were up to 5 years out of high school. Greater percentages of youth who had participated in this program had successful employment outcomes compared to estimates of youth with disabilities in the NLTS (Blackorby & Wagner, 1996), suggesting that vocational education and inclusion may be associated with postschool success. However, disability was found to be a contributing factor to these outcomes, with much greater percentages of youth with learning disabilities achieving successful employment outcomes than youth with mental retardation.

Summary. The eight comparative studies reviewed provide some support for five of the recommended best practices. For youth with intellectual disabilities, greater

proportions of successful postschool outcomes were observed for youth who had received work experiences or vocational education (Hasazi, Gordon, Roe, & Hull, 1985) and for youth who had participated in a program that included transition planning, age-appropriate inclusion, and interagency collaboration (Zafft et al., 2004). For youth with all disabilities, greater proportions of successful postschool outcomes were observed for youth who had received work experiences (Colley & Jamison, 1998), vocational education (Colley & Jamison, 1998; Hasazi, Gordon, & Roe, 1985), and inclusion in general education (DiGiacomo, 2002) than for youth who had not received these school program variables, and greater percentages of youth who had participated in programs that emphasized either vocational education and inclusion (Luftig & Muthert, 2005) or vocational or academic coursework, transition planning, and family involvement (Aspel et al., 1998) achieved successful outcomes than youth with disabilities in the NLTS. In general, school program variables were associated with more successful outcomes, but one study found that work experience and vocational education were not associated with any difference in outcomes for youth with intellectual disabilities (Sitlington et al., 1992), one study found that work experience was not associated with any difference in outcomes for youth with all disabilities (Hasazi, Gordon, & Roe, 1985), and one study found that participation in a program that included vocational education and inclusion was associated with less successful outcomes for youth with intellectual disabilities than youth with learning disabilities (Aspel et al., 1998).

Several factors other than school program variables were found to be associated with differences in postschool outcomes. For youth with intellectual disabilities, gender and severity of disability were identified as influences on postschool outcomes. Higher

proportions of males were found to be employed than females (Hasazi, Gordon, Roe, & Hull, 1985; Sitlington et al., 1992) and a higher proportion of youth with less severe mental retardation was found to be employed than youth with more severe mental retardation (Hasazi, Gordon, Roe, & Hull). For youth with all disabilities, gender, disability, and high school completion were found to be associated with differences in outcomes. Higher proportions of youth who were male, had learning disabilities, and had completed high school were found to be employed than youth who were female, had intellectual disabilities, or had dropped out of high school (Luftig & Muthert, 2005; Hasazi, Gordon, & Roe, 1985; Sitlington et al.). No family characteristics were identified as factors that influence postschool outcomes. However, the school characteristic of urbanicity was found to be associated with a difference in outcomes, with a higher proportion of youth who attended urban schools employed than youth who attended rural schools (Hasazi, Gordon, & Roe).

Comparative studies such as those reviewed here are useful for identifying variables that may be important in the transition to adulthood. Studies of this type can provide a detailed examination of current situations and can identify promising practices or problems with current practices (Isaac & Michael, 1997; Johnson, 2001). Indeed, the study by Zafft et al. (2004) was the only study of the potential of age-appropriate inclusive experiences for youth who are ages 18 to 21 for improving postschool outcomes. However, there are limitations both with this type of methodology and with the studies included in this review. The major limitation with comparative methodology is that is does not fully explain relationships, test hypotheses, or examine predictive relationships between variables (Isaac & Michael). As the effect of only one or two

variables at a time can be examined, it is possible that a significant difference in outcomes may be attributable to some other factor and not the variable of interest. Although the results of these studies are useful for exploring possible practices that make a difference in outcomes, these studies do not provided strong evidence confirming the effectiveness of the recommended best practices. In regards to the specific studies in this review, only three studies examined differences in outcomes for youth with intellectual disabilities (Hasazi, Gordon, Roe, & Hull, 1985; Sitlington et al., 1992; Zafft et al., 2004). All but one study (Aspel et al., 1998) examined only employment outcomes, and no studies examined quality of life outcomes. Additionally, half of these studies analyzed data that were collected at least 10 years ago. In all, the set of descriptive studies reviewed here provided very limited evidence in support of the recommended best practices for youth with intellectual disabilities and for meaningful outcomes such as quality of life.

Excluded studies. This review excluded two quantitative studies that are often cited in support of youth involvement in transition planning (Wehmeyer & Schwartz, 1997; Wehmeyer & Palmer, 2003). These studies were excluded as they did not directly assess the effect of a school program variable on postschool outcomes. However, as these studies can indirectly suggest that opportunities to develop self-determination are important for postschool success, a brief overview of findings is provided here. In both studies, Wehmeyer and Schwartz (1997) and Wehmeyer and Palmer (2003) examined the effect of level of self-determination on outcomes for youth with mental retardation or learning disabilities using statistical inference. In the first study (Wehmeyer & Schwartz, 1997), 80 youth from four states who had been out of high school for 1 year were found

to have higher rates of employment, better wages, and greater financial management if they had higher self-determination (as measured in the last year of high school), even when controlling for IQ. In the second study (Wehmeyer & Palmer, 2003), 94 youth from seven states who had higher self-determination were found to be more likely to live independently, be financially independent, be employed, and making progress toward getting employment benefits when they were 3 years out of high school. Both of these studies support the importance of self-determination in adult life and suggest that it is important to develop self-determination skills during the transition to adulthood. Involving youth in their transition planning has been recommended as one method to achieve this (Test et al., 2004).

In addition to these studies on the importance of self-determination, a number of studies have used NLTS and NLTS2 data to examine other influences on postschool outcomes. However, these studies were excluded from the review as they did not examine the impact of school program variables on postschool outcomes. A brief review of two of these studies will be provided here as one purpose of this review is to identify characteristics that have been found to affect postschool outcomes. One of the most frequently cited studies in the transition literature is by Blackorby and Wagner (1996). This study used NLTS data to examine the effect of individual characteristics on employment, postsecondary education, and independent living outcomes for youth when they were up to 2 years and then between 3 and 5 years out of high school. Factors found to contribute to significant differences in competitive employment, wages, postsecondary education, and independent living outcomes were disability, gender, ethnicity, and high school completion status. Across all four outcomes, fewer youth with mental retardation

were found to have achieved favorable outcomes than youth with mild disabilities such as learning disabilities, speech impairments, or hearing impairments. Males experienced higher rates of competitive employment and higher wages than females at both time points, although females achieved higher rates of independent living than males and both males and females achieved similar rates of postsecondary education enrollment across both time points. In regard to ethnicity, higher percentages of youth who were White were competitively employed, earning at least $6 an hour, and living independently than youth who were African American or Hispanic. Additionally, higher percentages of youth who were White or Hispanic were enrolled in postsecondary education when they were between 3 and 5 years out of high school than youth who were African American. Although youth who had dropped out of high school were found to be more likely to live independently and earn at least $6 an hour than other youth who were less than 2 years out of high school, this trend had reversed when youth were between 3 and 5 years out of high school, with a higher percentage of youth who had graduated from high school experiencing favorable outcomes across all four areas than youth who had dropped out or aged out of high school. In the most recent report examining NLTS2 data for youth up to 4 years out of high school (Newman et al., 2009), disability, gender, ethnicity, high school completion status, and family income were found to contribute to significant differences in outcomes including employment, postsecondary education, independent living, financial management, and participation in community activities. Similar to Blackorby and Wagner (1996), youth with mental retardation were found to be less likely to be productively engaged in either postsecondary education, work, or preparation for work, less likely to use financial management skills, and less likely to belong to

community groups than youth with mild disabilities such as other health impairments, visual impairments, or hearing impairments. Gender differences were not found in postsecondary education, productive engagement, or independent living outcomes, but males were more likely to be employed full time than females. Differences in postsecondary education, productive engagement, and community involvement outcomes were not found by ethnicity, although White youth were more likely than African American youth to have been employed since high school and more likely than Hispanic youth to be living independently. Finally, youth from families that earned more than $50,000 a year were more likely than youth from families that earned less than $25,000 a year to have been employed since high school, be productively engaged in postsecondary education, work, or preparation for work, and use financial management skills. These two studies provide additional evidence that factors other than school program variables contribute to the success of youth in early adulthood.

Summary. Through this review of nonexperimental quantitative research, evidence in support of the seven best practice school program variables was identified. Of the 33 studies that were included in this review, 25 used correlational methodology to identify significant predictors of outcomes and 8 used comparative methodology to examine differences in outcomes between groups who received or did not receive particular school program variables. Across all studies, preparation for employment and inclusion in general education were the most widely examined school program variables. Preparation for employment through vocational education or work experiences was examined in 23 of the 33 studies (70%). Five of the 23 studies examined preparation for employment for youth with intellectual disabilities. In general these variables were found

to be predictive of or associated with significant differences in outcomes including employment (13 studies), productive engagement in either postsecondary education, work, or preparation for work (two studies), quality of life (one study), and enrollment in postsecondary education (one study) for both youth with intellectual disabilities and youth with all disabilities. However, some studies found that indicators of preparation for employment were not associated with better postschool outcomes for youth with intellectual disabilities in the areas of employment (three studies), social integration (one study), and independent living (one study), and for youth with all disabilities in the areas of employment (two studies), independent living (three studies), community participation (one study), and postsecondary education (one study). Inclusion in general education as indicated by placement in general education classes or by taking academic classes was examined in 17 studies (52%), including three studies of youth with intellectual disabilities. These variables were found to be predictive of or associated with outcomes for youth with intellectual disabilities in the areas of employment (three studies) and social integration (one study), and for youth with all disabilities in the areas of employment (three studies), social integration or community participation (three studies), quality of life (two studies), independent living (two studies), postsecondary education (two studies), and general postschool success (one study). However, percentage of time spent in general education was found in some studies to be a nonsignificant predictor of outcomes including independent living (two studies), postsecondary education (two studies), and employment (one study) for youth with all disabilities only.

The remaining school program variables were examined in only a handful of studies. Five studies examined preparation for independent living as indicated by life-

skills instruction or community-based instruction (15%), including two studies of youth with intellectual disabilities. The variables were found to be associated with employment outcomes (two studies) and financial management (one study) for youth with intellectual disabilities and with independent living outcomes (one study) for youth with all disabilities, but were also found to be negatively associated with using community services for youth with intellectual disabilities (one study), negatively associated with postschool success for youth with all disabilities (one study), and unrelated to independent living outcomes for youth with all disabilities (one study). Four studies examined family involvement (12%), including one study of youth with intellectual disabilities. Family involvement was found to be positively associated with outcomes in all studies, including quality of life (two studies), employment (two studies), independent living (two studies), postsecondary education (one study), and community participation (one study). Five studies examined transition planning (15%), including one study of youth with intellectual disabilities. Transition planning was found to be positively associated with postsecondary education (three studies), employment (two studies), and independent living (one study) outcomes. Two studies examined interagency collaboration (6%), including one study of youth with intellectual disabilities. Both studies found that interagency collaboration was positively associated with either employment or postsecondary education outcomes. Finally, one study examined youth involvement (3%) for youth with all disabilities, finding that this variable was predictive of postsecondary education outcomes.

Also through this review, other factors that affect postschool outcomes were identified. Across the 33 studies included in the review and the four studies of

characteristics that were excluded from the main review (Blackorby & Wagner, 1996; Newman et al., 2009; Wehmeyer & Schwartz, 1997; Wehmeyer & Palmer, 2003), individual characteristics including gender, ethnicity, high school completion, disability, functional academic skills or IQ, self-determination, and self-care or adaptive behavior skills were found to be predictive of or associated with differences in postschool outcomes. In 13 studies, including studies of both youth with intellectual disabilities and youth with all disabilities, males were found to have significantly better employment outcomes than females. However, in studies of other outcomes, being female was predictive of productive engagement for youth with intellectual disabilities (one study), independent living for youth with all disabilities (two studies), and postsecondary education for youth with all disabilities (one study). Similarly, being nonminority was associated with better outcomes for youth with intellectual disabilities and youth with all disabilities in the areas of employment (seven studies), postsecondary education (one study), independent living (five studies), and productive engagement (one study). Only one study found that being a minority was predictive of outcomes, in the area of postsecondary education. Completing high school was associated with more successful outcomes than dropping out of high school for youth with intellectual disabilities and youth with all disabilities in the areas of employment (four studies), postsecondary education (three studies), independent living (two studies), and productive engagement (one study). Having a learning disability or other mild disability, or having higher functional academic skills or IQ, were associated with greater success than having mental retardation or having lower functional academic skills or IQ in the areas of employment (11 studies), postsecondary education (three studies), independent living (eight studies),

quality of life (two studies), and productive engagement (two studies). However, youth with moderate mental retardation were found to be more likely to be socially involved and use community resources than youth with mild mental retardation in one study. Higher levels of self-determination were found to be associated with more favorable employment and independent living outcomes in two studies. Higher levels of self-care and adaptive behavior skills were found to be associated with employment (two studies), independent living (one study), and quality of life (for youth with intellectual disabilities in one study). Family characteristics that were identified as predictors of or associated with differences in outcomes included family income, parent education level, parent employment, and parent expectations. Having higher family income, parents with higher education levels, and parents who were employed were associated with more favorable outcomes in the areas of employment (five studies), postsecondary education (three studies), independent living (one study), and general postschool success (one study). Parent expectations that the youth would attend postsecondary education was found to be a significant predictor of enrollment in postsecondary education (two studies), and parent expectations that the youth would live independently was found to be a significant predictor of independent living (one study). Finally, the school characteristic of urbanicity of the school attended by the youth was found to be associated with employment and independent living outcomes. Youth who had attended urban schools were found to be more likely to be employed than youth who attended rural or suburban schools in three studies, yet youth who attended rural schools were found to be more likely to be employed in one study, and youth who attended suburban schools were found

to be more likely to enroll in postsecondary education than youth in urban or rural schools in one study.

Limitations of the evidence. Despite many years of transition research, the evidence in support of recommended best practices for youth with intellectual disabilities is limited. Although correlational studies have provided evidence of predictive relationships between school program variables and postschool outcomes, very few of these studies have examined predictive relationships solely for youth with intellectual disabilities (three studies: Cameto, 1997; Kraemer et al., 2003; White & Weiner, 2004) and these studies are further limited either geographically (e.g., Kraemer et al.), by limited focus on employment outcomes (e.g., White & Weiner) or by age of the data examined (Cameto). Comparative studies have found differences in postschool outcomes for youth who received school program variables that are indicative of best practices; however, these studies did not test hypotheses regarding relationships between variables and are also limited by sample, location, and age of the data. Of the 33 studies reviewed, only six focused on youth with intellectual disabilities and only one of these used national data; however, these data were collected before transition planning became a mandated part of education services for youth with disabilities. Furthermore, only four studies overall stated that outcomes were examined for youth who were 4 or more years out of high school and only six examined the relationship between recommended best practices and quality of life outcomes. No study examined the combined effect of all seven recommended best practices. Overall, there is limited evidence from nonexperimental quantitative studies that the seven recommended best practices contribute to successful

postschool outcomes for youth with intellectual disabilities. In the next section, the extent to which the recommended best practices are used is discussed.

Extent of Use of Best Practices

A related issue that has been examined in the transition literature is the extent to which IDEA-mandated or recommended best practices are used and what variables affect their use. Research on the extent of compliance and best practice use has included descriptive analyses of NLTS2 data (e.g., Cameto, Levine, & Wagner, 2004; Katsiyannis, Zhang, Woodruff, & Dixon, 2005; Marder, Cardoso, & Wagner, 2003; Yu, Newman, & Wagner, 2009), analyses of the content of IEPs or individualized transition plans (Everson, Zhang, & Guillory, 2001; Grigal, Test, Beattie, & Wood, 1997; Powers et al., 2005), surveys of transition personnel (Agran, Cain, & Cavin, 2002; Baer, Simmons, & Flexer, 1996; Kraemer & Blacher, 2001; McMahan & Baer, 2001; Zhang, Ivester, Chen, & Katsiyannis, 2005; Zhang & Stecker, 2001), and observation of transition planning meetings (Martin, VanDycke, Greene, et al., 2006). Of these studies, four focused on best practice use for youth with intellectual disabilities (Katsiyannis et al., 2005; Kraemer & Blacher; Yu et al., 2009; Zhang & Stecker), two include separate presentation of results for youth with intellectual disabilities (Cameto et al., 2004; Marder et al., 2003), and eight examined best practice use for youth with any disabilities (Agran et al., 2002; Baer et al., 1996; Everson et al., 2001; Grigal et al., 1997; Martin, VanDycke, Greene, et al.; McMahan & Baer, Powers et al., 2005; Zhang et al., 2005). From these studies, it is clear that the eight recommended best practices are not widely used.

Although these studies have found that most youth with disabilities, including youth with intellectual disabilities, are attending their IEP or transition planning meetings

(Everson et al., 2001; Grigal et al., 1997; Powers et al., 2005), other studies have consistently found that only about half of youth provide input on their educational and transition planning (Katsiyannis et al., 2005; Martin, VanDycke, Greene, et al., 2006; Zhang & Stecker, 2001) and very few take a leadership role (Katsiyannis et al.; Martin, VanDycke, Greene, et al.). Similarly, although parent attendance at transition planning meetings is reported to be over 80% (Katsiyannis et al.; Kraemer & Blacher, 2001; Zhang et al., 2005), about a third of teachers in one study reported frequently or occasionally developing transition plans with no or little input from youth or family (Zhang & Stecker). Although transition planning is a mandated part of educational programming for youth with disabilities from age 16 on, reports from the NLTS2 have found that transition planning was conducted for only 88% of youth with intellectual disabilities (Cameto et al., 2004; Katsiyannis et al.). Disturbingly, less than two thirds of teachers interviewed in one study reported frequently listening to the youth's and parents' vision for adult life and incorporating youth and family needs, interests, and preferences into transition plans for youth with intellectual disabilities (Zhang & Stecker). Findings are mixed regarding the use of various practices for preparation for employment and independent living. Estimates of participation in work experiences range from 31% of youth with intellectual disabilities based on NLTS2 data (Marder et al., 2003) to 84% of youth with any disabilities based on reports of teachers in South Carolina (Zhang et al.). Similarly, reports of the extent to which youth are provided with preparation for independent living through a functional curriculum include 73% of youth with intellectual disabilities based on NLTS2 data (Yu et al., 2009), 85% of youth with severe mental retardation based on interviews with parents of young adults in California

(Kraemer & Blacher), and 92% of youth with any disabilities based on reports of teachers in South Carolina (Zhang et al.). Participation in general education was not examined in most of these studies, but data from the NLTS2 has suggested that only about two thirds of youth with intellectual disabilities took a course in a general education setting (Yu et al.). Additionally, few transition plans reviewed in Louisiana were found to address integrated activities for youth with all disabilities (Everson et al.). Across all studies, participation of staff from adult agencies in transition planning was reported to be very low (Agran et al., 2002; Everson et al.; Grigal et al.; Katsiyannis et al.; McMahan & Baer, 2001; Powers et al.).

Similar to the research on factors that affect outcomes, a number of factors have been found to affect the likelihood of youth with intellectual disabilities experiencing the recommended best practices. These factors also include individual, family, and school characteristics. A number of studies have examined the influence of these factors on legal compliance and best practice use, including reports using NLTS and NLTS2 data (Cameto et al., 2004; Marder et al., 2003; Newman, 2004; Wagner et al., 1993; Yu et al., 2009), surveys of transition team members (Baer, Simmons, & Flexer, 1996; McMahan & Baer, 2001; Zhang & Stecker, 2005), analysis of IEPs (Powers et al., 2005), correlational follow-up studies (Baer et al., 2003), and evaluation of transition programs (Love & Malian, 1997). Factors that are frequently cited as significant predictors of or influences on the use of best practices include: (a) gender, which has been found to influence the extent to which youth experienced family involvement (Newman), work experiences and vocational education (Baer et al., 2003; Doren & Benz, 1998 ; Powers et al.; Wagner et al., 1993), and a functional curriculum (Wagner et al., 1993); (b) ethnicity,

which has been found to influence the extent of youth and family involvement in transition planning (Cameto et al., 2004; Newman); (c) disability or level of cognitive functioning, which has been found to influence the extent to which youth experienced youth involvement (Powers et al.), family involvement (Newman), transition planning (Grigal et al.), work experiences and vocational education (Marder et al.; Yu et al.), preparation for postsecondary education (Powers et al.), participation in general education (Yu et al.), and interagency involvement (Grigal et al.); (d) household income, which has been found to affect family involvement (Newman), general education participation (Wagner et al.), and interagency involvement (Cameto et al.); and (e) urbanicity or location of the school attended by the youth, which has been found to influence the focus of transition planning (Powers et al.), and the extent to which youth have work experiences and participate in general education (Baer et al., 2003). Additional influences that have been found in fewer numbers of studies include that (a) several family characteristics impacted family involvement (Newman), (b) having the perceived potential to drop out of high school impacted the quality of transition planning (Love & Malian), and (c) a number of teacher and school characteristics including teacher training, experience in transition planning, percentage of nonminority students served, and having a school-based interagency transition team all predicted policy compliance (Baer et al., 1996; McMahan & Baer; Zhang & Stecker).

In sum, studies of compliance and best practice use have suggested that use of recommended best practices is not widespread but that there are several factors that impact the extent to which these practices are implemented. However, there are a number of limitations to these studies. First, few of these studies focus specifically on

best practice use for individuals with intellectual disabilities. As disability was identified as a factor that influences best practice use, it is possible that estimates of the extent to which these practices are used for youth with all disabilities may not hold true for youth with intellectual disabilities. Second, few studies have provided a recent national perspective on best practice use. Although studies using NLTS2 data have examined use of some recommended best practices, the extent to which indicators of all seven of the best practices are used has not been provided in a single unified report. Finally, most of these studies examined compliance with IDEA transition mandates rather than best practice use. As such, the majority of studies have not examined the extent of use of variables other than those mandated by IDEA. A national perspective on the extent to which recommended best practices are used that also identifies factors that affect their use specifically for youth with intellectual disabilities is still needed.

Summary

In summary, two issues require further examination in the area of best practices for transition for youth with intellectual disabilities. First, few studies have provided a national picture of the extent to which indicators of best practices are experienced by youth with intellectual disabilities (Marder et al., 2003; Newman, 2004; Wagner et al., 1993; Yu et al., 2009). Furthermore, although studies of best practice use have found that factors such as gender, ethnicity, disability, household income, and urbanicity of the school attended by the youth affect the likelihood of receiving best practices for youth with disabilities (Baer et al., 1996; Baer et al., 2003; Cameto et al., 2004; McMahan & Baer, 2001; Newman, 2004; Powers et al., 2005; Wagner et al., 1993), no factors other than level of cognitive functioning (Yu et al.) have been examined in studies of best

practice use for youth with intellectual disabilities. The present study addressed these gaps in the literature by examining whether a number of individual, family, and school characteristics affected the likelihood of receiving each of seven indicators of best practices for youth with intellectual disabilities.

Second, few studies have examined whether indicators of best practices in transition predict more successful postschool outcomes specifically for youth with intellectual disabilities (Cameto, 1997; Kraemer et al., 2003; White & Weiner, 2003). The existing studies have been limited by lack of use of a national sample (Kraemer et al.; White & Weiner), by a lack of focus on outcomes other than employment (Kraemer et al.), or by the age of the data analyzed (Cameto). Although findings from studies of predictors of postschool outcomes for youth with all disabilities have the potential to be extended to youth with intellectual disabilities, an analysis of the relationship between recommended best practices and postschool outcomes is warranted given the unique characteristics of this population. Additionally, few studies have provided a comprehensive examination of the individual, family, and school characteristics that predict postschool outcomes specifically for youth with intellectual disabilities. The present study addressed these gaps in the literature by examining (a) whether unalterable factors including individual, family, and school characteristics predicted several postschool outcomes for youth with intellectual disabilities and (b) whether school program variables that are indicative of best practice predicted several postschool outcomes for youth with intellectual disabilities over and above unalterable factors.

Chapter 3

Method

The present study used data from the National Longitudinal Transition Study-2 (NLTS2) to answer the descriptive, comparative, and predictive research questions. This chapter begins with an overview of the NLTS2, including methods and instrumentation. The remainder of the chapter describes the procedures for sample selection, specification of independent and dependent variables, and analyses that were used in the present study.

NLTS2 Overview

The NLTS2 was a longitudinal research study that followed youth with disabilities as they graduated from high school and began young adult life. Commissioned by the Office of Special Education Programs (OSEP) as part of a program of research mandated through the Individuals with Disabilities Education Act (IDEA) of 1997 and now overseen by the Institute for Education Sciences (IES), the NLTS2 was conducted under contract by SRI International (SRI International, 2000, January). The NLTS2 was a follow-up of the original National Longitudinal Transition Study (NLTS) conducted between 1984 and 1993, also by SRI International. The NLTS2 involved a nationally representative sample of youth with disabilities ages 13 to 16 on December 1, 2000 who were followed over a period of 10 years. The purpose of the study was to describe the characteristics, secondary school experiences, postschool experiences, and outcomes of youth with disabilities and to produce findings that were representative of both youth with disabilities in the United States as a whole and also youth in each of the 12 disability categories under IDEA (Valdés et al., 2009).

Stratified random sampling was used to select a nationally representative sample of youth with disabilities (Valdés et al., 2009). The universe of local education agencies (LEAs) in the United States that serve special education students in grades 7 to 12 was defined and stratified by region, size, and community wealth. Of this sample, approximately 3,630 LEAs and 80 state-supported special schools were invited to participate, with approximately 500 LEAs and 40 special schools agreeing to participate (Note: all subsequent respondent and sample sizes reported in this report are rounded to the nearest 10 to comply with IES security requirements regarding disclosure). Next, rosters of all students in the defined age range were stratified by disability category and a sample of 11,270 youth was randomly selected according to the identified necessary proportions of youth in each disability category. The numbers of LEAs and youth who were invited to participate took into account anticipated refusal and dropout rates to ensure that the sample in the final year of data collection would still be large enough to produce representative findings (SRI International, 2000, February).

Analyses of potential bias of the LEA sample have shown that there are few important differences in the selected sample compared to the universe of LEAs in region, size, or wealth, or on other important characteristics (Javitz & Wagner, 2003). Differences found between the NLTS2 sample of LEAs and the universe of LEAs serving students with disabilities in the U.S. included that the NLTS2 sample slightly underestimated: (a) the percentage of students in special education who spend less than 21% of their time outside the general education classroom, (b) the percentage of students with autism who spend the least time outside the general education classroom, and (c) the percentage of students with learning disabilities who spend the most time outside the

general education classroom. Also, compared to the universe of LEAs, the NLTS2 sample slightly overestimated the percentage of students tested in 8th grade compared to the universe of LEAs serving students with disabilities in the US. However, no factors that differed between the NLTS2 sample of LEAs and the universe of LEAs were found to make a difference in the educational experiences or outcomes of students with disabilities above and beyond individual, family, and school-level factors that are routinely controlled for in data analyses through weighting (see later discussion of weighting). Analyses of potential bias between respondents and the potential eligible sample also revealed few important differences (Javitz & Wagner, 2005). Statistically significant differences between respondents and the universe of potential respondents as reported by states to the OSEP for their entire population of students in special education were found in: (a) the percentage of parents who earned less than $25,000 a year, were satisfied with their child's school, volunteered at school, expected that their child would pursue postsecondary education; and (b) the percentage of youth who attended their neighborhood school, had been held back a grade, and had been suspended or expelled. However, these differences were small (at most a difference of 5.6%) and of little practical importance (Javitz & Wagner, 2005). All other differences between respondents and the universe of potential respondents were controlled for through weights developed for each instrument, thereby ensuring that the characteristics of the respondent sample closely matched those of the potential eligible sample.

Data collection for the NLTS2 was conducted in five waves (in 2001-2, 2003-4, 2005, 2007, and 2009). Information regarding school experiences, demographics, nonschool factors, and postschool outcomes was gathered from parents, youth, teachers,

and schools using computer-assisted telephone interviews, mail surveys, and direct or alternate assessments. The present study used data from the following sources:

Parent and youth surveys. Information was gathered from parents in every wave and from youth in every wave from Wave 2 on. Parent and youth surveys obtained information on youth and family characteristics, school experiences, nonschool experiences, postschool experiences, and postschool outcomes. This information was gathered primarily through telephone interviews using computer-assisted telephone interviewing, in which an interviewer follows a protocol to ask questions and code responses. Parents or guardians were the sole respondents in Wave 1. In subsequent waves, parents or guardians completed the first part of the interview, then youth completed the second part if they were available and able to respond to the interview questions. When youth were not able to respond, the parent or guardian completed the second part of the interview. The format of interview responses included yes/no responses (e.g., "Has there been an IEP meeting about youth's special education program or services this year?"), fixed-choice responses (e.g., "Is the youth male or female?"), Likert-type scales (e.g., "How useful would you say transition planning has been in helping youth prepare for life after high school? Would you say it has been very useful, somewhat useful, not very useful, or not at all useful?"), and short open-ended responses in which the interviewer coded the response immediately (e.g., "Where does the youth live now?" then interviewer coded all responses according to specified codes). When necessary, interviews were conducted in Spanish (about 5% of interviews in Wave 1). A written survey containing fewer questions was sent to parents and youth who could not be reached by telephone (approximately 2% of respondents in Wave 1). The numbers of

respondents for the parent and youth surveys across all disability categories (maximum 11,270 cases) were: Wave 1 = 9,230; Wave 2 = 6,860; Wave 3 = 5,660, and Wave 4 = 5,570.

School program survey. Information was gathered on the school programs of participants in Wave 1 for all youth and Wave 2 for youth who were still in high school. The school program survey consisted of a 16 page written survey that was completed by a member of the school staff who was most knowledgeable about the youth's school program. One survey was completed for each youth. Survey questions focused on school program variables, including school performance and experiences in general education and special education classes. The format of survey responses included yes/no responses (e.g., "Did this student's parent/guardian(s) attend the most recent IEP meeting?"), fixed responses (e.g., "Please indicate all the settings in which this student is taking language arts classes. Check all that apply." Options were general education classroom, special education classroom, individual instruction, community setting, or not applicable), Likert-type responses (e.g., "In general, how well does this student get along with other students?" Options were not at all well, not very well, well, or very well), and fill-in responses (e.g., "What is the student's grade level in reading as of the most recent assessment?"). The number of completed school program surveys was 5,590 in Wave 1 and 4,080 in Wave 2.

School characteristics survey. Information was gathered on the schools that youth attended in Wave 1 only. This survey consisted of a 16 page written survey that was completed by a member of the school staff who was knowledgeable about the school. One survey was completed for each school rather than for each participant, as the

same school characteristics would apply to all youth participants attending that school. Survey questions focused on the characteristics of the school such as the school's demographics, student population, staff, overall programs, and special education policies. Response formats included yes/no responses (e.g., "Does this school have a policy that prohibits the promotion of students who are performing poorly (i.e., social promotion), fixed responses (e.g., "Which of the following best describes the community in which this school is located?" Options included rural community, small town of fewer than 50,000 people, and so on), Likert-type scales (e.g., "In your opinion, how much pressure is placed on this school to increase and/or improve student test scores for all students?" Options were a great deal of pressure, a fair amount of pressure, a little pressure, and no pressure at all), and fill-in responses (e.g., "About what percentage of enrolled students are absent from school on a typical day?"). A total of 5,960 surveys were completed.

General education teacher survey. For youth who were thought to be taking a general education academic class, information was gathered on general education experiences in Wave 1 and again in Wave 2 if the youth was still in school. This 8 page written survey was intended to be completed by the person who taught the first academic general education class that a student took on a typical Monday. One survey was completed for each youth participant. Survey responses consisted of yes/no responses (e.g., "Is this student expected to keep up with other students in this class?"), fixed responses (e.g., "Which of the following, if any, are provided to this student to help him or her in this class? Check all that apply" followed by a list of accommodations and modifications), Likert-type scales (e.g., "In general, how well does this student ask for what s/he needs in order to do his or her best in class?" Options were not at all well, not

very well, well, or very well), and fill-in responses (e.g., "What is the specific course you teach this student?"). A total of 2,580 surveys were completed in Wave 1 and 1,980 were completed in Wave 2.

Sample

The present study focused on the subsample of youth in the NLTS2 sample who had intellectual disabilities. In the NLTS2 data, disability was determined by school district and parent reports. The variable *HasMR* was created by SRI International that combined both the district designation and the parent report so that a youth was identified as having mental retardation if either the district or the parent reported that the youth had been diagnosed with mental retardation in either Wave 1 or 2. In this study, youth were determined to be youth with intellectual disabilities if their score on the *HasMR* variable was equal to 1 (where 1 = Yes). The number of youth in this sample was $N = 1080$ (rounded to the nearest 10).

At the time of designing and conducting the present study, the latest data available were for Wave 4. Included in the NLTS2 data were variables that specified whether youth were in or out of school at each wave of data collection based on parent or youth reports. These variables were *W2InSchPar*, *W3InSchPar*, and *W4InSchPar*. A score of 1 on these variables indicated that the youth was in school at that particular wave, whereas a score of 0 indicated that the youth had left school by that wave of data collection. These variables were used to further specify the samples that were included in the present study.

Excluded groups. From the sample of youth with intellectual disabilities, four groups were excluded from all analyses. First, youth who were missing data on any of

the variables that specified when youth left school were excluded. This was a necessary step to ensure that length of time out of high school could be specified for all youth who were included in the analyses. The numbers of youth who were missing data were: *W2InSchPar* = 260, *W3InSchPar* = 250, and *W4InSchPar* = 290.

Second, youth who were in school in Wave 1 but left by Wave 2 were excluded from all analyses (n = 80). As youth were ages 13-16 at the beginning of the study in Wave 1 and as youth with intellectual disabilities typically remain in school until they graduate or age out at 21, youth with intellectual disabilities who had left by Wave 2 (in which they would have been ages 15 to 18) were expected to be qualitatively different to the rest of the population of youth with intellectual disabilities. Additionally, as these youth left high school early, they were not expected to have experienced the best practices that were the focus of this study. In checking the differences between youth who were out of school by Wave 2 and youth who were in school at Wave 2, youth who were already out of school by wave 2 had significantly higher levels of adaptive behavior (χ^2 = 9.27, p<.01), higher levels of self-determination (χ^2 = 9.77, p<.05), higher levels of functional academic skills (χ^2 = 10.45, p<.05), and were more likely to be from families with low income (χ^2 = 36.95, p<.001) and families whose parents had lower levels of education (χ^2 = 20.60, p<.01) than youth who were still in school at Wave 2. This suggested that youth who were more capable or from families with lower incomes and less educated parents were more likely to have left by Wave 2, although the exact reason for their leaving early was not examined. These youth were therefore excluded from all analyses due to these differences. However, this also meant that the present study was

designed to generalize to youth with intellectual disabilities who do not leave school too early to have experienced any of the best practices for transition.

Third, youth who were still in school at Wave 4 were excluded (n = 170). As these youth had not yet transitioned to adult life, they did not have postschool outcomes that were necessary to be included in predictive analyses. To maintain consistency across the samples for descriptive and predictive analyses, this group of youth was excluded from all analyses. Fourth, youth who were reported to have left school by Wave 3 but who were then reported to be in school at Wave 4 were excluded (n < 10). These were youth who dropped out of high school but who then returned at a later date. It was expected that the school experiences of school returners would not be representative of the population of youth with intellectual disabilities. Table 2 shows the groups that were excluded from and included in all analyses.

Final sample. After excluding these four groups, the sample that remained included two groups. The first group (Group 5 in Table 2) included youth with intellectual disabilities who were in school in Wave 2 but left school by Wave 3. The sample size for this group was n = 190. The second group (Group 6 in Table 2) included youth with intellectual disabilities who were in school in Wave 2 and Wave 3 but left school by Wave 4. The sample size for this group was n = 300. The total sample size for the present study was N = 490. These two groups formed the samples used in descriptive, comparative, and predictive analyses. A comparison of youth who were included in the final sample to youth with intellectual disabilities who were excluded from this sample on school program variables, characteristics, and outcomes is shown in Table 3 (note that in this table, percentages add up vertically to total 100% for each sample for each

characteristic variable. The results are presented in this manner to allow for comparison between the included and excluded samples).

Sample for descriptive and comparative analyses. As shown in Table 2, the sample of youth with intellectual disabilities who left school either by Wave 3 or Wave 4 was used in descriptive and comparative analyses (N = 490). This sample comprised all youth who were in the two groups shown in the last two rows of table 2 (groups 5 and 6).

Samples for predictive analyses. Samples for the predictive analyses of postschool outcomes used data for youth with intellectual disabilities who were out of high school up to 2 and between 2 and 4 years. As NLTS2 data were collected in waves, youth are designated as having left school at some point after the previous wave but before the next wave. Therefore, exact length of time out of high school cannot be stated. Instead, as waves were 2 years apart, youth who were in school at the time of the previous wave of data collection but out of school by the next wave of data collection are said to be *up to* 2 years out of high school. Similarly, by the following wave of data collection 2 years later, these youth are said to be *up to* 4 years out of high school. Two samples were defined: one sample for the analysis of outcomes up to 2 years and one sample for the analysis of outcomes between 2 and 4 years.

Youth out between 2 and 4 years. This sample consisted of youth who were still in school in Wave 2 but who had left by Wave 3 and remained out of high school in Wave 4 (shown in group 5 in Table 2). In other words, these youth did not drop out and then return to school. Therefore, these youth were more than 2 years and up to 4 years out of high school when outcomes were measured at Wave 4. The sample size for this group was n = 190.

Youth out up to 2 years. The sample of youth included in analyses of outcomes up to 2 years out of high school was the same sample as for descriptive and comparative analyses. However, the wave of data collection in which outcomes were measured varied according to when youth left high school. Outcome data up to 2 years out of high school for youth who were in school at Wave 2 but left by Wave 3 (shown in group 5 in Table 2) were measured using Wave 3 data. These were the same youth who comprise the sample for predictive analyses of outcomes between 2 and 4 years out of high school (n = 190). Outcome data up to 2 years out of high school for youth who were in school at Wave 3 but left by Wave 4 (shown in group 6 in Table 2) were measured using Wave 4 data. The sample size for this group was n = 300. These two groups were combined to give a total sample size of n = 490 for predictive analyses of outcomes up to 2 years out of high school. Figure 1 shows the Waves from which outcomes up to 2 years were measured for the two groups.

The decision to combine these two groups was made to maximize the sample size for this analysis. As the two outcome measurement points were relatively close together (2 years), it was not expected that the difference in time of leaving school would affect postschool outcomes. However, to ensure that youth in groups 5 and 6 were not significantly different, a chi-square analysis comparing these groups on key characteristics and school program variables was conducted. This analysis (shown in Table 4) found no significant differences in characteristics variables between the two groups, suggesting that these two groups were comparable and could be combined.

Variables

According to the NLTS2 conceptual framework, a combination of several factors affects postschool outcomes (see Figure 2). These factors include youth characteristics, family characteristics, school programs, school characteristics and policies, and nonschool factors (SRI International, 2000, January).

The purpose of the present study was to examine whether school program factors predict postschool success while controlling for other influences on postschool outcomes. However, as there was limited information available in the NLTS2 data on nonschool factors, the present study controlled for the effect of youth characteristics, family characteristics, and school characteristics (see Figure 3).

Independent variables. Variables that were measured in the NLTS2 within each of the four categories shown in Figure 3 were identified. Specific NLTS2 variables for use in the present study were then selected based on their match with best practices or factors associated with postschool outcomes identified in the review of the literature conducted in chapter 2. These independent variables included seven best practice school program variables, six youth characteristics, five family characteristics, and one school characteristic. For certain variables, predominantly characteristic variables, a clear match can be seen between the factor of interest and the variable in the NLTS2. For example, gender was a factor of interest and also a variable in the NLTS2. However, for other variables, particularly school program variables, the variable in the NLTS2 is an *indicator* of whether this variable occurred. For example, the NLTS2 variable of "taking an academic class in a general education setting" is an indicator of the best practice variable of "general education participation." The selection of variables was guided and reviewed by researchers from SRI International who were familiar with the dataset.

To create variables that matched the constructs of interest, recoding of NLTS2 variables was necessary. In the following sections, the sources for variables and procedures for recoding are described for variables in each of the four independent variable categories. Table 5 provides a summary of the variables that were analyzed in the present study.

Best practice school program variables. Based on findings of the review of the literature described in chapter 2, seven best practice school program variables were of interest. These were: (a) youth involvement, (b) family involvement, (c) individualized transition planning, (d) work experiences, (e) life skills instruction, (f) inclusion in general education settings, and (g) interagency involvement. Corresponding variables in the NLTS2 dataset that could serve as indicators of whether these best practices were received included both dichotomous and categorical variables. The research questions for this study focused on differences in whether youth received or did not receive these best practices and whether receiving or not receiving these practices predicts postschool success; research questions did not focus on *how much* of a particular best practice predicts postschool success. Therefore, variables in this category needed to indicate whether youth *received* or *did not receive* each best practice school program variable. For this reason, corresponding NLTS2 variables were recoded for use in all analyses to indicate whether each of the seven school program variables was received or not received. Where NLTS2 variables were of a dichotomous nature, receiving a particular variable was indicated by a "Yes" response to the survey question. For example, family involvement was judged to have been received if the parent responded "Yes" when asked if they had met with teachers to set postschool goals. Where NLTS2 variables were of a

categorical nature, decisions were made as to which categories indicated that a variable was received. For example, youth involvement was judged to have been received if the student's role in transition planning was either that of leadership or active participant, but not received if the student's role was that of inactive participant or nonparticipant. For two school program variables, inclusion in general education and interagency involvement, multiple NLTS2 variables were combined as NLTS2 questions focused on *specific* classes and *specific* persons at the IEP meeting, whereas the variables of interest for this study were whether the youth participated in *any* academic classes in the general education classroom and whether *any* adult agency representatives were present at the IEP meeting. A description of recoding procedures for each variable and references for other studies or reports of NLTS2 data that used similar recoding procedures are provided in Appendix B.

The school program variables were taken from the school program survey conducted in Wave 2, with the exception of the family involvement variable for which the parent survey was considered the appropriate data source. Variables were selected from the latest wave for which data was available (Wave 2) because transition planning may not have begun for all youth by Wave 1. However, when Wave 2 data were missing, Wave 1 school program or parent survey data were used to replace missing values (see later discussion of missing data).

Youth characteristic variables. In studies reviewed in chapter 2, six youth characteristics were found to be predictive of or associated with postschool success. These variables are gender, ethnicity, high school completion status, functional academic skills or IQ, self-determination, and adaptive behaviors. In the NLTS2, exact matches

could be found for gender, ethnicity, and high school completion status. The remaining three variables could be assessed through survey questions that are indicative of these constructs. IQ was not gathered through the NLTS2 surveys; instead, parents were asked four questions that relate to the youth's functional academic skills (including ability to tell time, understand common signs, count change, and use the telephone). Ratings of these skills have been combined in previous reports using NLTS or NLTS2 data to create a measure known as "functional mental skills." This variable was used in the present study but was referred to as functional academic skills. Self-determination was measured in the NLTS2 using the Arc's Self-Determination Scale. However, direct assessments using this scale were conducted for few youth with intellectual disabilities and therefore, this variable was not available for most youth in the current sample. Instead, a variable which combined responses from teachers to a question concerning how well the youth asked for what he or she needed in either general, special, or vocational education settings, was used as an indicator of the level of youth's self-determination (as in Cameto, Levine, & Wagner, 2004). Finally, parents were asked two questions in Wave 1 regarding the youth's ability to dress and feed self. In previous reports using NLTS or NLTS2 data, these two survey responses have been combined to create a measure known as "self-care skills." This variable was used in the present study as an indicator of level of adaptive behaviors.

Some recoding of NLTS2 variables was necessary for youth characteristics. For the descriptive analyses planned in the present study, characteristic variables needed to be in either categorical or dichotomous format. Additionally, as the necessary sample size for sufficient power increases as the number of categories increases, it was beneficial to

keep the number of categories for each variable as small as possible. For the predictive analyses using logistic regression, characteristic variables could be of any type (e.g., dichotomous, categorical, continuous); however, dichotomous independent variables have greater interpretability than categorical or continuous variables. For these reasons and based on the precedent of recoding into dichotomous variables set in previous studies, characteristic variables were recoded into dichotomous variables for both descriptive and predictive analyses except where this did not make intuitive sense. It was decided that all six youth characteristic variables made sense when recoded into dichotomous variables. Ethnicity, for which the NLTS2 variable comprises six categories, was recoded as nonminority (white) vs. minority (all other categories), as was done by several previous studies (e.g., Cameto, 1997; Heal & Rusch, 1994; Heal & Rusch, 1995; Heal et al., 1997). Functional academic skills, which was a scale from 4 to 16 for the NLTS2 variable, was recoded as high (scores 12-16) vs. low (scores 4-11), as was done by Miceli (2008). Self-determination, which was rated on a Likert-type scale between 1 and 4, was recoded as high (ratings of 3 or 4) vs. low (ratings of 1 or 2) as was done by Cameto et al. (2004). Adaptive behavior, which was a scale of 2 to 8 for the NLTS2 variable, was recoded as high (scores 6-8) vs. low (scores 2-5). This variable has been recoded into high and low categories in previous reports (e.g., Wagner et al., 2005; Wagner et al., 2007) but categories in these reports have not used consistent cut-off scores. In the present study, ratings of pretty or very well (scores of 3 or 4) for both self-care items (total 6-8) indicated high adaptive behavior skills. Gender and high school completion status were already in dichotomous form. Although some information might have been lost when recoding variables in this way, this decision increased the sample

size in each category for descriptive analyses and increased interpretability in both descriptive and predictive analyses.

Youth characteristic variables were taken from several sources in the NLTS2 data. Where available, Wave 2 data was the source for youth characteristic variables to maintain consistency with school program variables. Additionally, parent surveys rather than school surveys were the preferred source for these variables as it was assumed that parents know their children best. Gender, ethnicity, and functional academic skills were taken from Wave 2 parent survey data. High school completion status was taken from Waves 3 and 4 parent and youth survey data. The self-determination variable was created from Wave 1 teacher and school program survey data and was taken from a cross-instrument data file available in the NLTS2 dataset. The adaptive behavior variable was taken from Wave 1 parent survey data as the questions on which this variable is based were not asked in Wave 2. Where data are missing they were filled in from Wave 1 data (see later discussion of missing data). Sources, survey questions, and a description of recoding procedures for youth characteristics are shown in Appendix B.

Family characteristics variables. In the review of the literature conducted in chapter 2, five family characteristics were found to predict or be associated with best practice use and postschool success. These variables were: household income, education level of the head of household, employment status of the head of household, parent expectations regarding future employment of the youth, and parent expectations regarding future postsecondary education enrollment of the youth. Corresponding variables for each of these family characteristics were found in the NLTS2 parent surveys without any need to create new variables. The family characteristic variables were either

dichotomous or categorical. As with the youth characteristics, it was decided that almost all of these variables made sense when recoded as dichotomous variables. Head of household education, which included 11 categories, was recoded as high school or less (categories 1-3) vs. some college (categories 4-11). Although this dichotomous variable had not been used in previous studies, Wagner, Cameto, and Newman (2003b) combined responses from the 11 categories to create four categories: less than high school, high school, some college, and Bachelor's or more college. The present study, therefore, collapsed the four categories used by Wagner et al. (2003b) into two categories: high school or less, and at least some college. Parent expectations for both employment and postsecondary education, which were rated on a scale of 1 (definitely will) to 4 (definitely won't), were recoded as definitely or probably will vs. definitely or probably won't, as was done by Miceli (2008) and Wagner et al. (2005a). Parent employment was already in dichotomous form. However, it did not seem intuitive to recode household income, which consisted of three categories (low, medium, and high), into a dichotomous variable. Therefore, the three levels of this variable were maintained in all analyses. Similar to youth characteristics, all family characteristic variables were taken from Wave 2 data and filled in from Wave 1 when missing. Appendix B provides survey questions and recoding procedures for these variables.

School characteristic variables. In the review of the literature conducted in chapter 2, only one school characteristic variable was found to be predictive of or associated with best practice use and postschool outcomes. This variable was urbanicity or location of the school that the youth attended. A corresponding variable was found in the NLTS2 school characteristics survey conducted in Wave 1. This variable had three

levels: rural, suburban, and urban. It did not make sense to recode this variable into a dichotomous variable as this variable consists of three distinct categories rather than a scale. Therefore, this variable was retained in categorical format throughout the analyses. Appendix B provides survey questions for this variable.

Dependent variables. In the present study, a number of postschool outcomes were examined at two time points after youth leave high school. In typical studies of postschool outcomes of youth with disabilities, such as those reviewed in chapter 2, the outcomes of interest are employment, postsecondary education, and independent living. However, the present study had a slightly different focus on postschool outcomes for two reasons. First, although employment and postsecondary education were included as outcome measures, independent living was not included as an outcome measure because few youth with intellectual disabilities were expected to be living independently in the early postschool years. Reports from the NLTS2 have found that only about 16% of youth with intellectual disabilities who had been out of high school up to 2 years and only about 14% of youth with intellectual disabilities who had been out of high school up to 4 years were living somewhere other than with their parents (Newman et al., 2009; Wagner et al., 2005a). As the early postschool years are a transitional period in which youth in general, and not just those with disabilities, are not expected to live independently (Arnett, 1998), it was decided that the time period for which outcomes are currently available for youth with intellectual disabilities using the NLTS2 was too early to detect influences on independent living outcomes. For this reason, independent living was not included as an outcome in the present study. Second, one purpose of this study was to address the lack of research on factors that affect quality of life as an outcome for youth

with intellectual disabilities. As discussed in chapter 2, quality of life is viewed as a more meaningful measure of postschool success but has been examined in only a handful of studies of predictors of postschool outcomes. Although quality of life was not measured comprehensively in the NLTS2, several variables are available that were indicative of quality of life constructs. Two variables of interest that were used in the present study were (1) youth's rating of their enjoyment of life, and (2) youth's or parent's ratings of youth's social interactions. As the first variable, in which youth were asked to rate their enjoyment of life, was only assessed through youth responses and not asked of parents, and as only youth who were able to answer questions similar to the parent survey were administered the youth survey, there were fewer complete cases for the enjoyment of life analyses. To address this issue, the second variable, a measure of the youth's social interactions as reported by ether the youth or the parent, was also examined to provide an additional perspective on quality of life. In all, four outcomes (employment, postsecondary education, enjoyment of life, and social interactions) were examined at two time points (up to 2 years and between 2 and 4 years out of high school) for a total of eight dependent variables.

The NLTS2 parent and youth surveys included many variables regarding postschool outcomes in each of these four areas. The following variables were selected as indicators of each postschool outcome. These variables were all taken from the parent/youth surveys conducted in Waves 3 or 4. Appendix B provides an overview of the sources, survey questions, and recoding procedures for these dependent variables.

Employment. For the employment outcome, youth's current employment status was the outcome of interest. This variable corresponded to the survey question, "Do you

have a paid job now other than work around the house?" Employment status may change frequently for youth in the early postschool years, so this variable was selected to provide a snapshot of employment at the time at which the survey was administered. The variable that was used was a dichotomous variable (employed or not employed) that was set to the youth's response if the youth was interviewed, otherwise it was set to the parent's response.

Postsecondary education. For the postsecondary education outcome, the outcome of interest was whether youth had ever enrolled in postsecondary education since leaving high school. This variable corresponded to a combination of responses to the survey questions, "Since leaving high school, have you ever taken classes at a (a) 2-year, junior, or community college, (b) postsecondary vocational, business, or technical school, or (c) 4-year college or university?" This variable was selected rather than current enrollment in postsecondary education as responses to questions regarding current enrollment may have been influenced by the time of year in which the survey was administered (for example, during summer breaks). Furthermore, it was of greater interest to know whether youth had ever taken any postsecondary education in the early postschool years than whether they were currently doing so. As with the employment outcomes, the variable that was used was a dichotomous variable (ever took or never took any postsecondary education) that was set to the youth's response if the youth was interviewed, otherwise it was set to the parent's response.

Enjoyment of life. The outcome of enjoyment of life was indicated by a single survey question that was asked of youth: "During the last week, how often did you feel that you enjoyed life?" Youth were asked to select a response from four options: never or

rarely, sometimes, a lot of the time, or most or all of the time. As this question involved subjective assessment of the youth's enjoyment of life, it was not asked of parents. To maintain consistency with the other dependent variables, this variable was recoded as a dichotomous variable. Responses of "never or rarely" and "sometimes" indicated non-enjoyment of life and responses of "a lot of the time" and "most or all of the time" indicated enjoyment of life.

Social interactions. The outcome of social interactions was indicated by a survey question that was asked of youth (if available) and parents: "During the past 12 months, about how many days per week did you usually get together with friends outside of organized activities or groups?" This variable has been used in NLTS2 reports as a primary outcome for social interactions (e.g., Newman, Wagner, Cameto, & Knokey, 2009; Wagner, Cadwallader, & Marder, 2003; Wagner et al., 2005a). This variable was recoded as in NLTS2 reports to create a dichotomous variable: youth saw friends at least weekly or less than once a week. The response used to create this variable was based on the youth's response when available, otherwise the parent's response was used.

Two-year and four-year outcomes. Each of these four dependent variables was measured at two time points. However, the actual wave of data collection for each time point varied based on when youth left high school. As explained in the earlier discussion of the sample that was used in this study, two groups made up the sample for this study. Youth who were in school in Wave 2 but left by Wave 3 (those in group 5 in Table 2) had "up to 2 year" outcomes at the time of Wave 3 data collection. Youth who were in school in Wave 3 but left by Wave 4 (those in group 6 in Table 2) had "up to 2 year" outcomes at the time of Wave 4 data collection. These two groups were combined, so

outcomes up to 2 years out of high school were measured at either Wave 3 or Wave 4 depending on when youth left high school. Four year outcomes could only be examined for youth who left school by Wave 3. For this group (group 5), outcomes between 2 and 4 years out were measured at the time of Wave 4 data collection.

Analysis Methods

Descriptive analysis. The first analysis addressed the research question: (1) to what extent are best practice school program variables used for transition-age youth with intellectual disabilities. To answer this question, population estimates for the percentage of youth with intellectual disabilities who are receiving or not receiving each of the seven best practice school program variables were calculated for the entire sample (N = 490). This was done using the SPSS Complex Samples module to apply appropriate weights to a simple descriptive analysis of the percentage of youth in the sample who received or did not receive each school program variable (see later discussion of weighting).

Comparative analysis. The second set of analyses addressed the research question: (2) do significant differences exist in whether youth received each best practice school program variable based on individual, family, and school characteristics? To answer this question, the comparative analysis looked for differences in youth, family, and school characteristics for each of the school program variables. Here, the null hypothesis was that receiving each school program variable was independent of youth, family, and school characteristics. A useful method for analyzing associations between two variables is to display frequencies in a two-way contingency table. For example, for two categorical variables X and Y, where I is the number of categories of X and J is the number of categories of Y, a table is created to show all possible combinations of X and

Y. This table has *I* rows, *J* columns, and therefore *IJ* cells. In the present analysis, each school program variable had two categories ("received" and "did not receive"), so *J*=2. The categorical variables denoted by *X* were the youth, family, and school characteristics, which had either 2 or 3 categories (only family income and urbanicity had 3 categories). Therefore, the number of rows *I* was 2 for all comparisons except for household income and urbanicity, in which the number of rows was 3.

Once this table has been created, the chi-square test can be used to test whether observed frequencies differ significantly from what would be expected. Expected frequencies for contingency tables are calculated using the formula:

$$E_{ij} = \frac{R_i C_j}{N}$$

where E_{ij} is the expected frequency for row *i* and column *j*, R_i is the corresponding row column total, C_j is the corresponding column total, and *N* is the total number of observations. The χ^2 statistic is then calculated as:

$$\chi^2 = \sum \frac{(n_{ij} - E_{ij})^2}{E_{ij}}$$

where n_{ij} are the observed frequencies for the cell in each row *i* and column *j*, and E_{ij} are the expected frequencies for each corresponding cell. The obtained value for χ^2 is then compared to the chi-square distribution with $(I-1)(J-1)$ degrees of freedom. For the comparative analyses, the significance level was set at .01 (see later discussion of significance level). As the chi-square test is not a valid statistical test when the expected frequencies for each cell are too small, it was necessary to check that all expected frequencies were at least 5 (Agresti, 2007; Howell, 2004).

For variables with only 2 categories, it was possible to calculate relative risk. The relative risk is the risk of an event occurring (i.e., receiving a particular school program variable) given a particular factor (i.e., having a particular characteristic). For example, the relative risk indicates how much more or less likely females were to be involved in their transition planning than males. Relative risk is calculated as:

$$Relative\ risk = \frac{Probability\ of\ success\ in\ row\ 1}{Probability\ of\ success\ in\ row\ 2}$$

In this case, "success" means "receiving a particular school program variable." A relative risk of 1.0 occurs when these probabilities are equal (in other words when probability of receiving a school program variable is independent of the particular characteristic).

In cases where there are more than two categories for a variable *Y* (i.e., for the household income and urbanicity variables), standardized residuals were used to identify cells that have contributed to a significant chi-square test result. Standardized residuals (*r*) are calculated as:

$$r_{ij} = \frac{n_{ij} - E_{ij}}{\sqrt{E_{ij}}}$$

As 95% of the standardized residuals are expected to lie between -2 and +2, values of r_{ij} farther from 0 than ±2 indicated cells that contributed to a significant chi-square test (Agresti, 2007; Stevens, 2002).

The procedures for the comparative analyses were as follows: First, all variables (with the exception of household income and urbanicity) were recoded into dichotomous variables as described in the independent variable section above. Then, the crosstabs function in SPSS Complex Samples was used to obtain results for comparative analysis

for all 12 characteristics for each school program variable (total 7 analyses). Results that are reported include: actual sample size on which population estimates are based, tables of cell population estimates (percentages), standard error, chi-square, significance level, relative risk for 2x2 comparisons, and standardized residuals for 3x2 comparisons (i.e., for household income and urbanicity). To ensure that youth who had data on best practice school program variables were not significantly different to youth who were excluded from the comparative analyses because they were missing data on these variables, missing data analyses were conducted. These analyses were crosstabulations of youth who had or were missing data on each school program variable and all characteristic variables.

Power analysis. According to Cohen (1992), with α set at .01 (see later discussion of significance level), a sample size of 130 is needed to detect a medium effect size in a 2x2 contingency table. For variables with three categories, a sample size of 154 is needed to detect a medium effect size for a 3x2 contingency table. As the smallest sample size needed to detect a small effect size in a 2x2 contingency table is 1,168, this analysis only had sufficient power to detect medium or large effect sizes.

Predictive analysis. The final set of analyses addressed the two research questions: (3a) do individual, family, and school characteristics alone predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school; and (3b) controlling for individual, family, and school characteristics, does experiencing each best practice school program variable predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high

school? Given that the research questions looked at predictive relationships, regression was the appropriate type of analysis (Leech, Barrett, & Morgan, 2005). In particular, logistic regression was used as the dependent variables were dichotomous. Logistic regression has been used in several previous studies that have used both NLTS or NLTS2 data and other data to examine predictive relationships in transition research (e.g., Baer et al., 2003; Benz et al., 1997; Cameto, 1997; Doren & Benz, 1998; Halpern et al., 1995; Harvey et al., 2002; Rabren et al., 2002). In the following paragraphs, an explanation is provided for why multiple linear regression is inappropriate for use with dichotomous dependent variables and how logistic regression addresses the limitations of multiple linear regression.

Logistic regression. In multiple linear regression, the relationship between the dependent variable and independent variables is estimated by a linear combination of the observed predictor variables as represented in the equation:

$$\hat{Y} = b_0 + b_1 x_1 + \cdots + b_k x_k$$

where $\hat{Y}$ is the estimated dependent variable for *k* predictor variables (denoted by *x*). This model assumes that there is a linear relationship between the dependent and independent variables. In the case where the dependent variable is dichotomous (in other words where the outcomes can be denoted by either 1=success or 0=failure as in the present study), the predicted values generated through regression denote the probability of *Y* occurring. However, if linear regression is used to generate these values, probabilities greater than 1 and less than 0 will be predicted. Furthermore, in linear regression Y is assumed to be normally distributed. As a dichotomous dependent variable has a binomial distribution and as it is not possible to have probabilities greater

than 1 or less than 0, it is clear that linear regression is not an appropriate procedure when examining these types of variables.

Agresti (2007) explains that the relationship between an independent variable x and $\pi(x)$, the probability of success for a given value of x, is usually nonlinear and is most often best represented by an S-shaped curve. The mathematical function that forms an S-shaped curve is:

$$\pi(x) = \frac{\exp(\alpha + \beta x)}{1 + \exp(\alpha + \beta x)} = \frac{e^{\alpha+\beta x}}{1 + e^{\alpha+\beta x}}$$

where β represents the change in the probability per unit change in x. This is known as the logistic regression function (Agresti, 2007). This formula can be transformed to give the logit of this probability:

$$logit[\pi(x)] = \log\left(\frac{\pi(x)}{1 - \pi(x)}\right) = \alpha + \beta x$$

Or for *k* independent variables:

$$logit[\pi(x)] = \log\left(\frac{\pi(x)}{1 - \pi(x)}\right) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k$$

By transforming the dependent variable in this way, the problem with the requirement that probabilities be bounded by 0 and 1 is solved. The logistic regression model, then, is a special case of multiple linear regression in which the dependent variable is categorical (in this case dichotomous). As the requirements for ordinary least squares estimation procedures used in linear regression are also not met with a dichotomous dependent variable, logistic regression uses maximum likelihood estimation (see Pampel, 2000, for a full explanation). Logistic regression is a useful analytic tool for dichotomous dependent variables as it allows examination of how well a group of categorical or continuous

predictor variables explains or predicts the dependent variable and produces parameter estimates that are relatively intuitive to interpret. In logistic regression, independent variables can be all dichotomous, all categorical, all continuous, or a mixture of any of these types of variables (Hosmer & Lemeshow, 1989).

When thinking about the probability of the outcome variable occurring (in other words $\pi(x)$ or the probability that the dependent variable *Y*=1), it is useful to look at the odds of this event:

$$Odds = \frac{Probability\ of\ event\ occurring}{Probability\ of\ event\ not\ occurring} = \frac{\pi(x)}{1-\pi(x)}$$

The logistic regression equation, then, produces the log of the odds ratio. Therefore, the odds of the outcome variable occurring can easily be generated from the results of the logistic regression analysis. The odds ratio is then interpreted as the probability of a particular outcome occurring given a particular combination of the independent variables. Furthermore, parameter estimates can also be interpreted in the following way. Taking the exponential of the logit function shown above gives:

$$\frac{\pi(x)}{1-\pi(x)} = \exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k) = e^{\alpha} * e^{\beta_1 x_1} * \ldots * e^{\beta_k x_k}$$

Therefore, e^{β_i} represents the change in the odds ratio for every 1-unit increase in a particular predictor x_i. In other words, with all other predictors held constant, the odds of the dependent variable occurring are multiplied by e^{β_i} when there is a 1-unit change in the predictor variable x_i. For example, if the coefficient for the independent variable of received work experiences is 1.3 for the employment dependent variable, where received work experiences is dummy coded as 0=did not receive and 1=received, the odds of

being currently employed are $e^{1.3}$ = 3.8 times more likely for youth who received work experiences than those who did not.

Although logistic regression uses maximum likelihood estimation rather than the typical ordinary least squares estimation used in linear regression, measures of model fit analogous to those found through ordinary least squares estimation can be examined (Pampel, 2000). These include statistics such as the -2 log likelihood of the baseline model (analogous to the total sum of squares), the -2 log likelihood of the model of interest (analogous to the error sum of squares), and the difference between these two functions (analogous to the regression sum of squares). However, these statistics are not available when using SPSS Complex Samples (as was required in this study to obtain accurate weighted estimates). Instead, the model chi-square statistic was used to evaluate the significance of each model, similar to previous studies that have used SPSS Complex Samples to analyze NLTS2 data (e.g., Miceli, 2008). To evaluate the change in significance between the initial model containing only characteristics variables and the full model containing characteristics and best practice school program variables, a chi-square difference test was conducted (calculated as $\chi^2_{diff} = \chi^2_{full} - \chi^2_{initial}$ compared to the χ^2 distribution with $df_{diff} = df_{full} - df_{initial}$).

Several additional factors were considered to evaluate model fit. In multiple linear regression, R^2 values are examined to determine the amount of variance explained by the combination of predictor variables. However, calculation of R^2 is not possible in logistic regression. Instead, a number of methods have been proposed to calculate pseudo-variance, known as pseudo R^2 (Pampel, 2000). There is no consensus as to which method provides the most accurate assessment of the fit of the model and these values should be

used only as a "rough guide" to the amount of explained variance (Pampel, p. 50). A typical approach is to provide the range of these estimates but not to interpret them in the same way as R^2 given the lack of agreement in estimates. Several measures of goodness of fit that are referred to as pseudo R^2 (Cox and Snell, Nagelkerke, and McFadden pseudo R^2s) were examined in the present study. Another method for evaluating model fit is to examine the classification table, which compares observed group membership to predicted group membership (Pampel). A 2x2 classification table is produced that classifies the percentage of cases for which the outcomes were 0 or 1 with the percentage of cases for which the model predicts outcomes of 0 or 1. The more accurate the model, the higher the percentage of correctly classified cases. The classification table is provided using SPSS and was examined for each model. Finally, the significance of individual parameter estimates was tested using Wald statistics, similar to t-tests in linear regression. For the predictive analyses, the significance level was set at .0125 (see later discussion of significance level).

Assumptions for logistic regression models follow those for all general linear models (Agresti, 2007). First, the sample size should be adequate for the number of predictors in the model. Agresti (2007) recommends at least 10 outcomes of each type (i.e., at least 10 cases where Y=0 and 10 cases where Y=1) for every predictor. In the present study, this condition was violated in all but two of the models (all except models for 2-year employment and 2-year social outcomes). This may mean that estimates obtained were biased and that standard errors were inaccurate, although Agresti adds that this guideline is "approximate" (p. 138) and often violated. Second, predictor variables must be related to the dependent variable but not highly correlated with each other.

Based on recommendations by Menard (2002) for evaluating collinearity in logistic regression analyses, multiple regression analyses were conducted using SPSS Base 17.0 containing all of the independent variables for each dependent variable. Collinearity statistics were requested and tolerance values examined. A criterion of tolerance values less than .2 was used to judge whether predictors were highly correlated with other predictors in the model (Agresti, 2007; Menard, 2002; Pallant, 2007); however, no problems were found with collinearity for any of the models. Finally, any dichotomous or categorical independent variables must be dummy coded with one less dummy variable than the number of levels in the original variables and a reference category must be specified (LeBlanc & Fitzgerald, 2000). In other words, dichotomous independent variables needed to be recoded so that they hold values of 0 and 1 (this was already the case so no recoding was necessary) and the two categorical variables (household income and urbanicity) needed to be recoded into two dummy variables each. Household income was recoded into the variables "high income" (1 = high income, 0 = not high income, i.e., low or medium) and "medium income" (1 = medium income, 0 = not medium income), with low income becoming the reference category. Urbanicity was recoded into the variables "rural" (1 = rural, 0 = not rural, i.e., suburban or urban) and "suburban" (1 = suburban, 0 = not suburban), with urban becoming the reference category.

Steps needed to be taken to reduce the large number of potential characteristics variables in each analysis as a greater number of variables means greater estimated standard error, and therefore a greater likelihood that the results are dependent on the observed data and would not be generalizable (Hosmer & Lemeshow, 1989). Procedures for variable selection proposed by Hosmer and Lemeshow (1989) were followed for each

of the eight dependent variables. First, a univariate analysis of the association between each independent variable and the dependent variable was conducted by using crosstabulations and examining the Pearson χ^2 statistic. As suggested by Hosmer and Lemeshow, any variable with an association of $p<.25$ was selected for the initial logistic regression model. The logistic regression model was then run with these variables and the importance of each variable in the model was selected by examining the Wald χ^2 statistics for each independent variable. A variable was removed if its significance in this model was less than .25. If more than one variable was not significant, the variable with the highest p-value was removed first. The simpler logistic regression model was run and the model χ^2 and χ^2 difference statistics were evaluated to check that there was not a significant loss of model fit from removing this variable. The coefficients for each of the independent variables were also examined to ensure that these coefficients had not changed in magnitude after removing the unnecessary variable. Then, the significance of each individual variable was examined again, and the steps were repeated to remove any nonsignificant variables from the model. Throughout all of these steps, both of the dummy coded variables for income or urbanicity were retained if one was found to have $p<.25$ (i.e., if high income had $p<.25$ then both high income and medium income were retained in the analyses). These steps were repeated until only variables with $p<.25$ were retained in the model and this procedure was repeated for all eight dependent variables. This resulted in between three and eight characteristics variables selected for each of the logistic regression analyses used to answer research question 3a. To answer research question 3b, the logistic regression model containing only those characteristics variables remaining after the variable selection procedures was compared to the model containing

those characteristics variables and the best practice school program variables. The following are reported for each analysis: sample size, Wald χ^2 for the model, pseudo R^2, classification table, and parameter estimates (estimate, standard error, Wald χ^2, exp(B), and odds ratio). As the Wald χ^2 statistic has been criticized as being too conservative (Agresti, 2007), any predictors that were found to have an odds ratio of greater than 2.0 or less than 0.5 (i.e., the predictor doubles or halves the chances of achieving a successful outcome) are presented in summary tables and interpreted.

Significance level. In this study, a large number of statistical analyses were conducted (more than 90 chi-square tests for comparative analyses and eight separate logistic regression analyses). To guard against making a Type I error (i.e., concluding that differences exist where none actually exist), it is appropriate to make adjustments to the α-level for each statistical test to keep the overall Type I error rate at α. A typical approach might be to use a Bonferroni correction to divide the usual .05 significance level by the number of within-analysis tests that will be run. For logistic regression analyses, the number of within-analysis tests that were conducted, in other words the number of tests run with the same set of outcomes (so the number of tests with outcomes up to 2 years and the number of tests that are run with outcomes between 2 and 4 years) was four (one for each of the four dependent variables). A Bonferroni correction to the significance level gives an α of .05/4 = .0125 for each test. This significance level was used for each of the logistic regression analyses. However, for the comparative analyses, a similar approach to adjustment of the significance level would lead to a greatly reduced significance level (e.g., dividing by the number of tests for each school program variable would give .05/12 = .00417) and therefore an increased risk of Type II error (i.e.,

concluding that no differences exist when differences do exist). To balance these two issues, a conservative α-level of .01 was used when examining results of chi-square tests. This approach has been used in other reports using NLTS2 data that have also conducted multiple descriptive analyses (e.g., Cameto et al., 2009).

Missing data. As the NLTS2 is a large-scale, longitudinal study, missing data are to be expected (Diemer, 2008). Missing data present several problems that are not easy to resolve. Although removing missing data from the sample that was analyzed would appear to have been the easiest solution, there were problems associated with the two most common methods of deletion. Listwise deletion, in which cases with missing data on any variable are removed from analyses, would result in drastically reduced sample size, reduced power, and biased parameter estimates (McKnight, McKnight, Sidani, & Figueredo, 2007). Pairwise deletion, in which missing data for a particular variable rather than an entire case are deleted, would result in differing sample sizes for each analysis (McKnight et al., 2007); this would a particular issue for the two-way contingency tables as differing samples would be used to create tables for each comparison. However, replacing missing values with imputed values is not an ideal solution when working with noncontinuous variables. As all variables in the present study were either dichotomous or categorical and as similar variables to missing variables are not available for any outcome or for some independent variables, imputation procedures were limited to either zero imputation, in which missing values are replaced with a value of 0, or random value imputation, in which missing values are replaced with randomly generated values (McKnight et al.). Although these procedures would have

allowed for a larger sample to be retained, neither approach appeared to provide realistic estimates for missing data and both would have resulted in incorrect standard errors.

To find an appropriate solution for handling missing data, one factor was considered. Weights that have been calculated by SRI International take into account instrument nonresponse (Diemer, 2008). In other words, the weights that were applied throughout the analyses corrected for missing data at the instrument level. An analysis of potential bias between respondents and the eligible population on Wave 1 and 2 instruments found that there were few differences in key characteristics between responders and nonresponders and that where differences were found, applying the instrument weights corrected 75% of these differences (Javitz & Wagner, 2005). For this reasons, the following approaches were used to handle missing data.

First, for independent variables (youth, family, and school characteristics and school program variables) missing data in Wave 2 instruments were replaced by corresponding variables in Wave 1 instruments. The rationale for this decision was that it was assumed that these variables had remained relatively stable over the two years between Waves 1 and 2. Although this was not ideal as some variables, particularly school program variables, may have changed over the two-year time period, Wave 1 variables were the closest possible variables that could provide similar information to that which was missing. The percentage of the total sample for which missing wave 2 data was imputed from wave 1 for each best practice and characteristic variable was as follows: youth involvement = 17.8%; family involvement = 4.1%; transition planning = 17.2%; work experiences = 19.2%; life skills instruction = 18.4%; inclusion in general education = 2.2%; interagency involvement = 17.6%; high school completion <.1%;

functional academics = 4.9%; parent income = 7.6%; parent education <.1%; parent employment = 2.0%; parent expectations for employment = 42.5%; parent expectations for postsecondary education = 66.3%. The percentage of missing data imputed from wave 1 was much higher for parent expectations than other variables as these survey questions were only asked at wave 2 if youth with still younger than age 18. No data was imputed for gender, ethnicity, or urbanicity as these variables had complete data at wave 2, and no imputation was possible for self-determination or adaptive behavior as these variables were only measured at wave 1. Using a similar method to replace missing values in the dependent variables, however, was not possible as it was assumed that employment, postsecondary education enrollment, social interactions, and enjoyment of life would change during the 2-year time period in between each wave. No other imputation procedure was used for the dependent variables.

Second, although it resulted in differing sample sizes for each variable, pairwise deletion was used in comparative analyses. The rationale for this decision was that deleting cases in which data were missing for any of the 12 characteristic variables and 7 school program variables would have resulted in a drastically reduced sample size. The sample size on which the population estimates were based is reported for each two-way crosstabulation. Third, listwise deletion was used in logistic regression analyses as there were no other options available in SPSS Complex Samples. The number of cases excluded from each analysis is reported. Fourth, weights were applied to correct for nonresponse to each instrument. To ensure that the sample retained in comparative analyses was not biased, the comparability of groups that were included or excluded from each analysis was assessed on all characteristics variables.

Weighting. The NLTS2 was designed to produce results that generalize to (a) the population of youth in the United States in the specified age range (i.e., who were ages 13-16 in December 2000) who are receiving special education and also (b) the population of youth who are in each of the 12 disability categories (Valdés et al., 2009). As participants were selected using stratified random sampling, not all youth with disabilities in the defined population have an equal likelihood of participating in the study. For this reason, data must be weighted in order to estimate true values for the entire population. SRI International provides a sample design data file that links each case to information on how cases were selected based on disability category and region, size, and wealth of the LEA. Using the SPSS Complex Samples module, an analysis plan file was created that generated weighted estimates based on the information in the sample design data file. Weights that were provided for each instrument within each Wave also needed to be incorporated into the analysis plan depending on the variables that were being analyzed. When analyzing variables within a single instrument for a single wave (e.g., comparing parent income and parent involvement in Wave 2 using only the Parent Interview), the appropriate weight was the full weight for that instrument (e.g., the weight variable "n2ParentWt"). However, when analyzing variables across multiple instruments or waves (e.g., comparing parent income in Wave 2 using the Parent Interview to youth involvement in transition planning in Wave 2 using the School Program Survey) the appropriate weight was taken from the instrument with the smallest sample size (e.g., Wave 2 Parent Interview had sample size *n*=6,840 and Wave 2 School Program Survey had sample size *n*=4,080 so the appropriate weight is the weight for the School Program Survey "wt_NPR2"). As the variables in the logistic regression analyses changed

repeatedly through the variable selection procedures, the Wave 4 Parent Interview weight was applied to all analyses to maintain consistency. These procedures were followed to generate weighted estimates for all analyses.

Summary

The present study conducted analyses of the NLTS2 to answer several research questions related to the use of best practices for transition for youth with intellectual disabilities. In this chapter, an overview of the sample and analysis methods was provided. In the following chapter, the results of these analyses are presented in full.

Chapter 4

Results

The purpose of the present study was to address the gaps in the literature on best practices for transition for youth with intellectual disabilities. The study had three purposes: (1) to examine the extent of use of the recommended best practices for youth with intellectual disabilities from a national perspective; (2) to identify factors (such as individual, family, and school characteristics) that are associated with best practice use; and (3) to examine whether use of best practices predicts successful postschool outcomes for youth with intellectual disabilities above and beyond the effect of unalterable factors such as individual, family, and school characteristics. A subset of data from the NLTS2 including only youth with intellectual disabilities was analyzed. The best practices of interest, referred to as best practice school program variables, were: (a) youth involvement, (b) family involvement, (c) individualized transition planning, (d) work experiences, (e) life skills instruction, (f) inclusion in general education settings, and (g) interagency involvement. The present study used descriptive, comparative, and predictive analyses to answer the following research questions.

Purpose 1: Describing the extent of use of best practice school program variables

Research question (1) To what extent are best practice school program variables used for transition-age youth with intellectual disabilities?

Purpose 2: Comparing the characteristics of youth who received best practice school program variables to those who did not

Research question (2) Do significant differences exist in whether youth received each best practice school program variables based on individual, family, and school characteristics?

Purpose 3: Identifying predictive relationships between best practice school program variables and postschool outcomes

Research question (3a) Do individual, family, and school characteristics predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school?

Research question (3b) Controlling for individual, family, and school characteristics, does experiencing each best practice school program variable predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school?

This chapter begins with an overview of the characteristics of this sample, then results are presented in order of these three research purposes.

Sample characteristics

The weighted population estimates for characteristics based on the characteristics of this sample are shown in Table 6. The estimates in this table vary slightly compared to the estimates provided in Table 3 for two reasons. First, cases that were missing data that were necessary to be included in the chi-square analyses shown in Table 3 could be included in the analysis shown in Table 6. Second, the analysis shown in Table 3 used variables that had not been subjected to missing data replacement as this was only done for cases in the final sample. Replacing missing data in wave 2 variables with data from

wave 1 variables was done by hand, and this procedure was therefore only completed for cases in the final sample.

The sample of youth with intellectual disabilities was approximately evenly split on variables such as gender (59.1% male vs. 40.9% female), ethnicity (53.6% white vs. 46.4% minority), functional academic skills (54.8% low vs. 45.2% high), and self-determination (45.8% low vs. 54.2% high). A large majority of these youth had completed high school (81.1% vs. 18.9% dropped out) and had adaptive behaviors that were rated as high (90.0% vs. 10.0% low). With regard to family characteristics, more youth came from families with low income (47.8% vs. 24.3% medium income and 27.9% high income) and whose parents had high school or less education (63.7% vs. 36.3% some college education) and who were employed (61.9% vs. 38.1% not employed). Parent expectations were high for employment (85.4% expected that youth definitely or probably would be employed) but were less optimistic for postsecondary education (38.1% expected that youth definitely or probably would attend postsecondary education). The majority of youth attended schools located in suburban areas (53.2% vs. 15.3% rural and 31.6% urban). Overall, few cases were missing data on characteristics with the exception of the self-determination variable, which was missing for over 200 cases in the sample.

The postschool outcomes experienced by youth with intellectual disabilities based on the outcomes for this sample are also shown in Table 6. Two years after leaving high school, 41.8% of youth were employed, 17.8% had attended postsecondary education, 72.4% reported enjoying life, and 55.9% saw friends at least weekly. Between 2 and 4 years out of high school, 41.4% of youth were employed, 34.5% had attended

postsecondary education, 74.2% reported enjoying life, and 71.5% saw friends at least weekly. The amount of missing data varied greatly across the 8 outcome variables, from a low of 90 (4-year enjoys life variable) to almost complete data (2-year postsecondary education variable). Missing data was particularly high for both of the enjoyment of life variables and for all of the 4-year outcome variables. In the later discussion, comparisons are made between these characteristics and youth with intellectual disabilities in the NLTS2 as a whole to determine whether the sample was representative of transition-age youth with intellectual disabilities.

Purpose 1: Descriptive

The first research question examined the extent to which best practice school program variables were experienced by transition-age youth with intellectual disabilities. It was hypothesized that the best practice school program variables would not be found to be universally implemented for all youth with intellectual disabilities. It was expected that at least 80% of youth with intellectual disabilities would have received transition planning and family involvement and that at least half of youth with intellectual disabilities would have received preparation for employment through work experiences, life skills instruction, and inclusion in general education. It was expected that youth involvement and interagency collaboration would have been received by no more than 25% of youth with intellectual disabilities.

A descriptive analysis was used to provide weighted population estimates for the percentage of youth with intellectual disabilities who received each of the seven best practice school program variables. Results are shown in Table 7. As expected, transition planning was estimated to have been received by a high percentage of youth with

intellectual (96.9%, SE = 1.4%). Family involvement was estimated to have been received by 68.4% of the population of youth with intellectual disabilities (SE = 2.7%), a high percentage but slightly less than expected. Work experiences were estimated to have been received by 57.0% (SE = 5.4%) and inclusion in general education was estimated to have been received by 48.1% (SE = 9.6%) of youth with intellectual disabilities, approximately in line with the hypothesis. Life skills instruction was estimated to have been received by 72.2% (SE = 4.6%) of the population of youth with intellectual disabilities which exceeded the hypothesis. Youth involvement (57.7%, SE = 6.2%) and interagency involvement (42.5%, SE = 5.8%) were estimated to have been received by a higher proportion of youth with intellectual disabilities than was hypothesized, but the extent of use of interagency involvement was still less than the extent of use for all other practices. Estimates must be interpreted with some caution as data were missing for between 110 and 150 cases for almost all school program variables (with the exception of family involvement for which only 20 cases were missing data), and data were missing for approximately 360 of the 490 cases for the inclusion in general education variable (reflected in the high standard error for this estimate).

Purpose 2: Comparative

The second research question examined whether significant differences exist in whether youth received each best practice school program variables based on individual, family, and school characteristics. It was hypothesized that differences would exist in receiving each best practice based on individual, family, and school characteristics and that these would include variables examined in previous research (gender, ethnicity, functional academic skills, household income, and urbanicity of the school attended by

youth) as well as variables that had not been examined or found to be significant specifically for youth with intellectual disabilities in previous research (high school completion status, self-determination, self-care skills, parent education, parent employment, and parent expectations). In particular, it was hypothesized that youth with the following characteristics would be more likely to have received each of the best practices: males, nonminority youth, youth who completed high school, youth with high functional academic skills or adaptive behavior skills, youth with high levels of self-determination, youth from families with higher incomes, youth whose parents were more educated or employed, youth whose parents expected them to attend college or find employment, and youth in suburban settings.

Crosstabulation and chi-square analyses were used to compare the observed frequencies of youth with intellectual disabilities who received each of the best practice school program variables to expected frequencies with an alpha-level of .01 used to identify significant differences. Results are presented in Tables 8 – 14. Each table provides weighted population estimates for the percentage of youth with intellectual disabilities who received or did not receive each school program variable for each level of the characteristic variable, the sample size on which each 2x2 or 2x3 estimate is based, the χ^2 statistic, *p*-value, and relative risk (for 2x2 comparisons) or residuals (for 2x3 comparisons). Percentages for each 2x2 or 2x3 comparison total 100% (i.e., in the first cell of Table 8, 32.8% of all youth in this analysis were male and had received youth involvement). As the chi-square test is not a valid statistical test when the expected frequencies for each cell are less than 5 (Agresti, 2007; Howell, 2004), the expected frequencies for all comparisons were checked using unweighted estimates. Expected

frequencies were greater than 5 for all cells with the exception of five of the comparisons with the transition planning variable (see discussion below).

Youth involvement. Results of the chi-square analyses for the best practice school program variable of youth involvement are shown in Table 8. Two characteristics variables were found to be related to significant differences in receiving this best practice. Youth with high levels of adaptive behaviors were 13 times more likely to have been involved in their transition planning than youth with low adaptive behaviors (of all the cases, 57.2% vs. 30.3% were youth with high adaptive behaviors who received youth involvement whereas 0.6% vs. 11.9% were youth with low adaptive behaviors who received youth involvement, $\chi^2(1, N = 340) = 31.65, p < .001$). Youth whose parents expected they would be employed were four times more likely to have been involved in their transition planning than youth whose parents did not expect they would be employed (of all cases, 55.7% vs. 30.6% were youth whose parents who responded they definitely or probably will be employed who received youth involvement, whereas 2.1% vs.11.7% were youth whose parents who responded they definitely or probably will not be employed who received youth involvement, $\chi^2(1, N = 340) = 22.97, p < .001$).

Family involvement. Results of the chi-square analyses for the best practice school program variable of family involvement are shown in Table 9. No comparisons were found to be significant at $p<.01$. Although not significant, ethnicity and high school completion appeared to have some association on whether youth received family involvement. Youth who were white appeared to be somewhat more likely to have received family involvement (39.8% received vs. 13.8% did not receive) than youth who were minority (28.5% received vs. 17.9% did not receive, $\chi^2(1, N = 470) = 8.81, p = .04$).

Youth who dropped out of high school (10.2% received vs. 8.1% vs. did not receive) appeared to be less likely to have had families who were involved in their transition planning than youth who graduated from high school (58.6% received vs. 23.0% did not receive, $\chi^2(1, N = 460) = 8.08$, $p = .05$).

Transition planning. Results of the chi-square analyses for the best practice school program variable of transition planning are shown in Table 10. No comparisons were found to be significant at $p < .01$. Five of these comparisons (high school completion, adaptive behavior, household income, parent expectations of employment, and urbanicity) included cells with expected frequencies of less than 5.

Work experiences. Results of the chi-square analyses for the best practice school program variable of work experiences are shown in Table 11. Three characteristics were found to have a significant association with this best practice variable. Youth with low functional academic skills were two times more likely to have received work experiences than youth with high functional academic skills (of all cases, 41.3% vs. 17.5% of youth with low functional academic skills received work experiences; 15.7% vs. 25.5% of youth with high functional academic skills received work experiences, $\chi^2(1, N = 350) = 21.16$, $p < .01$). Youth whose parents had some college or more education were two times more likely to have had work experiences than youth whose parents had high school or less education (of all cases, 33.8% vs. 12.6% were youth whose parents had college education who received work experiences, whereas 23.3% vs. 30.5% were youth whose parents had high school education who received work experiences, $\chi^2(1, N = 350) = 18.23$, $p < .01$). Youth whose parents expected that they probably or definitely would not attend postsecondary education were two times more likely to have received work

experiences than youth whose parents expected that they probably or definitely would attend postsecondary education (of all cases, 41.7% vs. 19.6% were youth who were not expected to attend postsecondary education and who received work experiences, whereas 14.9% vs. 23.9% were youth who were expected to attend postsecondary education who had work experiences, $\chi^2(1, N = 350) = 17.00, p < .01$).

Life skills instruction. Results of the chi-square analyses for the best practice school program variable of life skills instruction are shown in Table 12. No comparisons were found to be significant at $p < .01$ but two variables were of interest. Youth whose parents had some college or more education (38.6% vs. 7.6%) appeared to be more likely to receive life skills instruction than parents who had high school or less education (33.5% received vs. 20.2% did not receive, $\chi^2(1, N = 370) = 11.46, p = .011$). Youth with low functional academic skills (47.1% received vs. 11.5% did not receive) also appeared to be more likely to receive life skills instruction than youth with high functional academic skills (25.1% received vs. 16.3% did not receive, $\chi^2(1, N = 380) = 9.80, p = .05$).

Inclusion in general education. Results of the chi-square analyses for the best practice school program variable of inclusion in general education are shown in Table 13. Two characteristics were found to have a significant association with this best practice variable. Youth whose parents were not employed were two times more likely to have been included in general education than youth whose parents were employed (of all cases, 25.7% vs. 7.2% of youth whose parents were not employed were included; 22.5% vs. 44.7% of youth whose parents were employed were included, $\chi^2(1, N = 130) = 16.06, p < .01$). Youth whose parents expected they probably or definitely would be employed were 14 times more likely to have experienced inclusion than youth whose parents

expected that they probably or definitely would not be employed (of all cases, 47.8% vs. 44.4% were youth whose parents expected employment and who were included; 0.3% vs. 7.4% were youth whose parents did not expect employment and who were included, $\chi^2(1, N = 130) = 5.95, p < .01$).

Interagency involvement. Results of the chi-square analyses for the best practice school program variable of interagency involvement are shown in Table 14. One variable was found to have a significant association with receiving this best practice variable. Youth who graduated from high school were four times more likely to have received interagency involvement than youth who dropped out of high school (of all cases, 41.5% vs. 47.1% were youth who completed high school who received interagency involvement; whereas 1.2% vs. 10.2% were youth who dropped out of high school who received this best practice, $\chi^2(1, N = 340) = 10.59, p < .01$).

Missing data analysis. To check if the samples that were included in above analyses were biased, missing data analyses were conducted. In these analyses, crosstabulation was used to compare the percentage of youth who were included in a particular analysis to the percentage of youth who were excluded because they were missing data on the best practice school program variable for each of the characteristics variables. Chi-square analyses were used to identify where significant differences existed between the included and excluded cases, thereby indicating that the characteristics of the included sample were different to the characteristics of the excluded sample. Results are shown in Tables 15 – 21. Across all 84 chi-square analyses, there were only three significant differences in characteristics between the included and excluded cases (with the alpha-level set again at .01. For the analyses of family involvement, significantly

more youth from rural schools (1.4% excluded vs. 13.9% included) than suburban schools (0.3% excluded vs. 52.8% included) were excluded from the analysis ($\chi^2(2, N = 400) = 12.91$, $p < .01$; See Table 16). For the analyses of life skills instruction, significantly more youth who were minority (11.0% excluded vs. 30.8% included) were excluded from the analysis than youth who were white (5.0% excluded vs. 53.2% included, $\chi^2(1, N = 490) = 23.03$, $p < .01$) and significantly more youth whose parents did not expect they would be employed (5.3% excluded vs. 11.5% included) were excluded from the analysis than youth whose parents expected employment (10.6% excluded vs. 72.6% included, $\chi^2(1, N = 480) = 14.90$, $p < .01$, see Table 19). In addition to these three significant differences, a further three differences are potentially of interest. For the analyses of transition planning, a higher percentage of youth who had dropped out of high school (1.1% excluded vs. 10.5% included) than youth who had graduated from high school (1.3% excluded vs. 87.1% included) was excluded from the analysis ($\chi^2(1, N = 480) = 5.83$, $p = .02$, see Table 17). For the analyses of inclusion in general education, a higher percentage of youth with low self-determination skills (35.8% excluded vs. 10.0% included) was excluded from the analysis than youth with high self-determination skills (35.0% excluded vs. 19.1% included, $\chi^2(1, N = 280) = 5.60$, $p = .05$, see Table 20). Finally, for the analyses of interagency involvement, youth with low functional academic skills (3.3% excluded vs. 55.2% included) were more likely to be excluded than youth with high functional academic skills (0.3% excluded vs. 41.2% included, $\chi^2(1, N = 490) = 3.49$, $p = .03$, see Table 21). As there were so few differences found between the included and excluded cases (only 3 significant and 3 potentially important differences out of 84

total analyses), it would appear that the sample that was included in the comparative analyses was more or less representative of the entire sample.

It is worth noting that the amount of missing data was high for two variables. In general, the chi-square analyses were based on samples of between 330 and 380 cases out of the potential 490 cases. (For the family involvement variable, at least 460 cases were included in almost all of the analyses. As the family involvement variable was taken from an instrument with a higher response rate than the instrument from which all other best practice variables were taken, this high inclusion rate is to be expected.) However, for comparisons with the self-determination variable, only about 260 to 280 of the cases were able to be included. This finding can be explained by the source of the self-determination variable: this variable was taken from the general education teacher survey, which had a much lower response rate than the other survey instruments, therefore more missing data is to be expected. Findings of significant or nonsignificant comparisons using this variable should be interpreted with caution. Additionally, all comparisons of characteristics with the general education inclusion variable were affected by missing data (see Table 13). In these analyses, only about 120 to 130 of cases could be included (only about 90 cases for self-determination), indicating that almost three-fourths of the data were missing. As this variable was created from several variables in the school program survey, there may have been a cumulative effect resulting in greater amounts of missing data. The results of these analyses must be interpreted with extreme caution given the high amount of missing data.

Summary of results for purpose 2. Do the results for this research question support the initial hypothesis? The answer to this question is yes and no. A summary of

the characteristics that were found to be associated with best practice use is shown in Table 22. Across all of the analyses, youth characteristics including adaptive behaviors, functional academic skills, and high school completion; and family characteristics such as parent level of education, parent employment, and parent expectations for employment and postsecondary education were found to have a statistically significant association with the extent to which youth received certain best practice school program variables (note that because of the high degree of missing data, the results from analyses including the self-determination or inclusion in general education variables are disregarded for this summary). However, no significant level of support was found for greater use based on the characteristics of gender, ethnicity, self-determination, family income, or urbanicity. In sum, the hypothesis that certain characteristics would be associated with the extent of use of best practices was supported, but there was no consistent pattern of characteristics that can be said to be associated with receiving all seven of the best practice variables.

Purpose 3: Predictive

The two remaining research questions addressed (a) whether individual, family, and school characteristics predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school; and then (b) controlling for individual, family, and school characteristics, whether experiencing each best practice school program variable predict successful postschool outcomes in employment, postsecondary education, enjoyment of life, and social interactions up to 2 and 4 years out of high school. For the first research question, it was hypothesized that characteristics would predict a significant amount of variance in successful postschool outcomes in these four areas and at both time points.

For the second research question, it was hypothesized that best practice school program variables would be significant predictors of postschool outcomes when controlling for other characteristics (in other words, that significantly more variance would be explained when school program variables are added to the model). It was further hypothesized that all school program variables would be equally predictive of postschool outcomes.

Before analyzing the first research question, several steps were taken to reduce the large number of characteristics variables that were to be included as predictors of each outcome. First, analyses of the associations between each characteristic variable and the outcome variables were conducted using chi-square analyses as a measure of the association between the dichotomous variables. Results of these analyses are shown in Table 23 (for associations with 2-year outcomes) and Table 24 (for associations with outcomes between 2 and 4 years out of high school, referred to as "4-year outcomes"). Associations between best practice school program variables and outcomes are included for comparison, but no steps were taken to reduce this set of variables. For each dependent variable, all characteristics variables with *p*-values equal to or less than .25 were selected for inclusion in the initial model for that dependent variable. For example, for the initial analysis of predictors of 2-year employment, there were 12 characteristics variables with $p \leq .25$ that were included in the initial model (those variables that were selected are marked with an asterisk). Between 4 and 12 characteristics variables were selected for each analysis.

Next, procedures were used to further select only those variables that were important to include in each model using the variable selection process described by Hosmer and Lemeshow (1989). A logistic regression analysis of the initial set of

characteristics was conducted for each outcome variable. Any variable with $p < .25$ (the cutoff value proposed by Hosmer & Lemeshow, 1989) was removed from the model and the logistic regression analysis was conducted again. Variables were removed in this way, one at a time, until only those variables with $p < .25$ were remaining in the final logistic regression model for characteristics. This process involved between 2 and 6 repetitions and resulted in between 3 and 8 characteristics variables included as predictors of the 8 outcome variables.

In order to ensure that the samples analyzed in each model were nonbiased due to missing data on the outcome variables, an additional missing data analysis was conducted. No significant differences in characteristics were found for youth who had data compared to youth who were missing data on the outcomes for 2-year postsecondary education, 2-year social inclusion, 4-year employment, 4-year postsecondary education, and 4-year social inclusion. For 2-year employment outcomes, a significantly greater proportion of youth who were from families with low or high income were missing data than youth from families with medium income ($\chi^2=7.56$, $p < .01$). For 4-year enjoyment of life outcomes, a significantly greater proportion of youth from families with low or medium income were missing data than youth from families with high income ($\chi^2=11.86$, $p < .01$). For the 2-year enjoyment of life outcomes, significant differences in the proportion of youth who were missing or not missing data were found for six characteristics. These were that youth with low functional academic skills ($\chi^2=31.83$, $p < .01$), low self-determination skills ($\chi^2=28.15$, $p < .01$), low adaptive behavior skills ($\chi^2=20.16$, $p < .01$), whose parents did not expect they would be employed ($\chi^2=39.67$, $p < .01$) or attend postsecondary education ($\chi^2=14.82$, $p < .01$), and who attended suburban or

urban schools (χ^2=12.79, $p < .01$) were more likely to be missing data than youth with high functional academic skills, high self-determination skills, high adaptive behavior skills, whose parents expected they would be employed or attend postsecondary education, and who attended rural schools. These results suggest that the samples analyzed in the models for 2-year and 4-year postsecondary education, 2-year and 4-year social inclusion, and 4-year employment were generally representative of the entire sample. However, the samples analyzed in the 2-year employment and 4-year enjoyment of life models were somewhat biased as they varied slightly in the proportion of youth with each income level compared to the full sample, and the sample analyzed in the 2-year enjoyment of life models was heavily biased in that it included youth who were more capable (as measured by the functional academics, self-determination, adaptive behavior, and parent expectations variables) and more likely to be from urban or suburban schools than the entire sample.

Research question 3a: Characteristics as predictors of outcomes. Following the procedures for variable selection, final logistic regression analyses were conducted using only the characteristics variables selected for each outcome. An alpha-level of .0125 was used to identify significant findings in these models, and an odds ratio of greater than 2.0 or less than 0.5 was used to identify important predictors in each model. This cutoff value for odds ratios made intuitive sense as identified predictors doubled or halved the chances of achieving a successful outcome. Results are presented in Tables 25-32. For each analysis, these results include estimates for each parameter (estimate, standard error, Wald χ^2, exp(B), and odds ratio), an overall evaluation of the model (Wald χ^2 for the model, pseudo R^2), and a classification table (comparing observed to

predicted group membership). Across all 8 logistic regression analyses, 6 models were found to be significant ($p < .01$). Only the models comparing characteristics with 2-year and 4-year enjoyment of life outcomes were not significant at the specified p-value. The results for each analysis are described briefly next.

Two-year employment. The combination of six characteristics variables (gender, functional academics, adaptive behavior, parent expectations for employment, rural school, and suburban school) significantly predicted two-year employment outcomes (χ^2 (6, N =280) = 30.59, $p < .001$, see Table 25). The range of values for pseudo R^2 was 0.163 to 0.269. The model correctly classified 59.5% of youth who were employed and 75.1% of youth who were not employed, for an overall success rate of 68.1%. No individual variables were significant predictors of 2-year employment outcomes, although when holding all other variables constant, youth whose parents expected they would be employed were 7.3 times more likely to be employed (p=.04).

Two-year postsecondary education. The overall model containing six characteristics variables (functional academics, parent employment, parent expectations for employment, parent expectations for postsecondary education, rural school, and suburban school) was significant (χ^2 (6, N =380) = 49.90, $p < .001$, see Table 26). The range of values for pseudo R^2 was 0.198 to 0.311. The model correctly predicted 40.9% of youth who had attended postsecondary education and 92.9% of youth who had not attended postsecondary education, for an overall correct prediction of 82.3%. Two of the characteristics variables were significant: holding all other variables constant, youth whose parents expected they would be employed were 41.96 times more likely to have attended postsecondary education than youth whose parents did not expect employment

($p < .01$), and with all other variables held constant, youth whose parents expected they would attend postsecondary education were 4.09 times more likely to have attended postsecondary education that youth whose parents did not expect postsecondary education ($p < .01$).

Two-year enjoyment of life. The combination of three characteristics variables (adaptive behavior, rural school, and suburban school) did not significantly predict 2-year enjoyment of life outcomes (χ^2 (3, N =170) = 7.64, p=.05, see Table 27). The The range of values for pseudo R^2 was 0.043 to 0.068. The model correctly classified 100% of youth who enjoyed life but 0% of youth who did not enjoy life, for an overall correct prediction of 77.7%.

Two-year social inclusion. The model containing six characteristics variables (ethnicity, self-determination, parent education, parent expectations for postsecondary education, rural school and suburban school) significantly predicted 2-year social inclusion outcomes (χ^2 (6, N =200)=33.31, $p < .001$, see Table 28). The range of values for pseudo R^2 was 0.191 to 0.308. The model correctly predicted 78.1% of youth who were socially included and 56.6% of youth who were not, for an overall success rate of 69.3%. Holding all other variables, constant, youth whose parents expected they would attend postsecondary education were 3.98 times more likely to be socially included than youth whose parents did not expect postsecondary education ($p < .01$).

Four-year employment. The combination of seven characteristics variables significantly (high school completion, functional academics, medium income, high income, parent expectations for employment, rural school, and suburban school) predicted 4-year employment outcomes (χ^2 (7, N =120) = 91.91, $p < .001$, see Table 29).

The range of values for pseudo R^2 was 0.309 to 0.463. The model correctly classified 85.9% of youth who were employed and 65.1% of youth who were not employed, with an overall correct classification of 74.3%. Four predictors were statistically significant. Holding all other variables constant, youth who completed high school were 5.68 times more likely to be employed than youth who dropped out ($p < .01$). With all other variables held constant, youth from families with high income were 6.57 times more likely to be employed than youth from families with low income ($p < .01$). Holding all other variables constant, youth whose parents expected employment were 31.81 times more likely to be employed than youth whose parents did not expect employment ($p < .01$). Finally, with all other variables held constant, youth who attended rural schools were 0.07 times as likely (in other words, 14.25 times less likely) to be employed than youth who attended urban schools ($p < .01$).

Four-year postsecondary education. The model containing eight characteristics variables (functional academics, medium income, high income, parent education, parent expectations for employment, parent expectations for postsecondary education, rural school, and suburban school) was significant (χ^2 (8, N =140) = 27.85, p=.001, see Table 30). This combination of predictors explained between 24.8% and 38.1% of the variance in the outcome variable. The model correctly predicted 58.1% of youth who had attended postsecondary education and 87.8% of youth who had not, with an overall correct classification of 76.7%. No variables were statistically significant, although youth who had high levels of functional academic skills were 4.02 times more likely to have attended postsecondary education than youth with low levels of functional academic skills with all other variables held constant (p=.02).

Four-year enjoyment of life. The combination of two characteristics variables (ethnicity and parent expectations for employment) did not significantly predict 4-year enjoyment of life (χ^2 (2, N =80) = 6.55, p=.04, see Table 31). These two characteristics explained between 12.1% and 18.8% of the variance in the outcome variable. The model correctly classified 97.3% of youth who enjoyed life but only 3.7% of youth who did not enjoy life, with an overall correct classification of 74.3%.

Four-year social inclusion. The model containing three characteristics variables (high school completion, rural school, and suburban school) was significant (χ^2 (3, N =110) = 14.38, $p < .01$, see Table 32). The combination of these predictors explained between 16.2% an d 25.1% of the variance in the outcome variable. The model correctly predicted 95.5% of youth who were socially included and 38.9% of youth who were not, for an overall correct prediction of 79.8%. With other variables held constant, youth who completed high school were 11.56 times more likely to be socially included than youth who dropped out ($p < .01$).

Overall. For all outcomes except for 2-year and 4-year enjoyment of life, combinations of between three and eight characteristics variables significantly predicted outcomes ($p < .01$). The values for pseudo R^2 ranged from a low of 0.043 for 2-year enjoyment of life to a high of 0.463 for 4-year employment. Characteristics including high school completion, family income, parent expectations for employment, parent expectations for postsecondary education, and urbanicity were found to be significant predictors of at least one outcome.

Research question 3b: Best practices as predictors of outcomes. Next, the best practice school program variables were added to each model (containing the same

characteristics variables for each outcome that were in the models for research question 3a) to determine whether these variables would significantly improve prediction of outcomes over and above the effect of characteristics variables. Although there were seven best practice school program variables of interest, two of these variables could not be included in the logistic regression analyses. First, almost all youth (about 97%) had a score of 1 on the transition planning variable. The lack of variability in whether youth received this variable caused a problem with zero cell count (i.e., that the dependent variable did not vary for one of the values of this independent variable, Menard, 2002). As this would have caused high standard errors and uncertainty about the parameter estimates, it was decided to remove this variable from the analyses. Second, almost three-fourths of the sample was missing data on the general education inclusion variable. Including this variable in the logistic regression analysis produced warnings that results may not have been reliable. With this variable removed, the analyses could be run without this high degree of uncertainty. For these reasons, it was decided to include only five of the best practice variables in the analyses and to leave out transition planning and general education inclusion.

The results for the analyses of best practice school program variables are shown in Tables 33-40. An alpha-level of .0125 was again used to identify significant findings in these models and an odds ratio of greater than 2.0 or less than 0.5 was used to identify important predictors in each model (i.e., predictor doubled or halved the chances of achieving a successful outcome). For each analysis, the results presented are estimates for each parameter (estimate, standard error, Wald χ^2, exp(B), and odds ratio), an overall evaluation of the model (Wald χ^2 for the model, pseudo R^2), a classification table

(comparing observed to predicted group membership), and a χ^2 difference test (comparing the χ^2 for the full model to the χ^2 for the model containing only characteristics variables). All of these logistic regression analyses were found to be significant ($p < .01$) and all but two were found to explain significantly more variance in outcome variables. The results for each analysis are described briefly next.

Two-year employment. The model containing characteristics and best practice school program variables was significant (χ^2 (11, N =200) = 46.96, $p < .001$, see Table 33). The range of values for pseudo R^2 was 0.225 to 0.357. The model correctly predicted 71.0% of youth who were employed and 76.1% of youth who were not employed, for an overall correct prediction of 73.8%. The χ^2 difference test was significant (χ^2_{diff} = 16.37, p=.006). Holding all other variables constant, youth whose parents expected they would be employed were 57.61 times more likely to be employed than youth whose parents did not expect employment ($p < .01$). Although not significant, youth who received life skills instruction were 0.39 times as likely (or 2.54 times less likely) to be employed than youth who did not receive life skills instruction (p=.06)

Two-year postsecondary education. The combination of characteristics and best practice school program variables significantly predicted 2-year postsecondary education outcomes (χ^2 (11, N =270) = 75.18, $p < .001$, see Table 34). The range of values for pseudo R^2 was 0.252 to 0.394. The model correctly classified 52.7% of youth who attended postsecondary education and 96.7% of youth who did not, with an overall correct classification of 87.6%. The χ^2 difference test was significant (χ^2_{diff} = 25.28, $p <$ .001). Three predictors were significant. Holding all other variables constant, youth whose parents expected employment were 28.16 times more likely to have attended

postsecondary education than youth whose parents did not expect employment ($p < .01$). With all other variables held constant, youth who attended rural schools were .17 times as likely (or 5.99 times less likely) to have attended postsecondary education than youth who urban schools ($p < .01$). Finally, youth who received work experiences were .24 times as likely (or 4.10 times less likely) to have attended postsecondary education than youth who did not receive work experiences ($p < .01$). Two additional findings for the best practice school program variables were not significant but are of interest. With all other variables held constant, youth who experienced youth involvement were 3.03 times more likely to have attended postsecondary education than youth who did not experience involvement (p=.03), and youth who received life skills instruction were 2.36 times more likely to have attended postsecondary education than youth who did not receive life skills instruction (p=.10).

Two-year enjoyment of life. The model containing characteristics and best practice school program variables was significant (χ^2 (8, N =130) = 22.58, $p < .01$, see Table 35). The range of values for pseudo R^2 was 0.172 to 0.262. The model correctly classified 100% of youth who enjoyed life but 0% of youth who did not enjoy life, for an overall correct classification of 72.4%. The χ^2 difference test was significant (χ^2_{diff} = 14.94, $p <$ .01). Although no individual predictors were significant, three best practice school program variables are of interest. With all other variables held constant, youth who experienced youth involvement were 0.33 times as likely (or 3.04 times less likely) to report enjoying life (p=.08). Holding all other variables constant, youth who received life skills instruction were 0.33 times as likely (or 3.05 times less likely) to have reported enjoying life than youth who did not receive life skills instruction (p=.16). Finally, with

all other variables held constant, youth who received interagency involvement were 0.28 times as likely (or 3.57 times less likely) to have reported enjoying life than youth who did not receive interagency involvement (p=.05).

Two-year social inclusion. The combination of characteristics and best practice school program variables significantly predicted 2-year social inclusion outcomes (χ^2 (11, N =170) = 46.32, $p < .001$, see Table 36). The range of values for pseudo R^2 was 0.270 to 0.413. The model correctly predicted 77.8% of youth who were socially included and 63.3% of youth who were not socially included, for an overall correct classification of 71.7%. The χ^2 difference test was not significant (χ^2_{diff} = 13.01, p=.02). Holding all other variables constant, youth whose parents expected they would attend postsecondary education were 6.21 times more likely to be socially included that youth whose parents did not expect postsecondary education ($p < .01$). Although no best practice school program variables were significant predictors, three are of interest. With all other variables held constant, youth who received youth involvement were 2.56 times more likely to be socially included than youth who did not experience involvement (p = .015). Holding all other variables constant, youth who received life skills instruction were 0.48 times as likely (or 2.08 times less likely) to be socially included than youth who did not receive life skills instruction (p=.27). Finally, youth who received work experiences were 2.28 times more likely to be socially included than youth who did not receive work experiences (p=.18).

Four-year employment. The model containing characteristics and best practice school program variables was significant (χ^2 (12, N =90) = 188.94, $p < .001$, see Table 37). The range of values for pseudo R^2 was 0.477 to 0.643. The model correctly predicted

83.9% of youth who were employed and 88.2% of youth who were not employed, with an overall correct prediction of 86.3%. The χ^2 difference test was significant (χ^2_{diff} = 97.03, $p < .001$). Four predictors were statistically significant. With all other variables held constant, youth who experienced family involvement were 0.13 times as likely (or 7.60 times less likely) to be employed than youth who did not experience family involvement ($p < .01$). Holding all other variables constant, youth whose parents expected employment were 50.35 times more likely to be employed than youth whose parents did not expect employment ($p < .01$). With other variables held constant, youth from families with high income were 15.56 times more likely to be employed than youth from families with low income ($p < .01$). Finally, with all other variables held constant, youth who attended rural schools were 0.05 times as likely (or 19.87 times less likely) to be employed than youth who attended urban schools ($p < .01$). In addition, four of the best practice school program variables are of interest. Holding all other variables constant, youth who experienced youth involvement were 4.68 times more likely to be employed than youth who did not experience involvement (p=.04). With all other variables held constant, youth who received life skills instruction were 0.32 times as likely (or 3.09 times less likely) to have be employed than youth who did not receive life skills instruction (p=.10). Holding other variables constant, youth who received work experiences were 5.24 times more likely to be employed than youth who did not receive work experiences (p=.03). Finally, with other variables held constant, youth who received interagency involvement were 0.46 times as likely (or 2.20 times less likely) to be employed than youth who did not receive interagency involvement (p=.19).

Four-year postsecondary education. The combination of characteristics and best practice school program variables significantly predicted 4-year postsecondary education outcomes (χ^2 (13, N =100) = 81.20, $p < .001$, see Table 38). The range of values for pseudo R^2 was 0.481 to 0.665. The combination of predictors correctly classified 84.5% of youth who had not attended postsecondary education and 89.5% of youth who had attended postsecondary education, for an overall correct classification of 87.8%. The χ^2 difference test was significant (χ^2_{diff} = 53.35, $p < .001$). Three best practice school program variables and one characteristic variable were significant predictors in this model. With all other variables held constant, youth who experienced family involvement were 41.28 times more likely to have attended postsecondary education than youth who did not experience family involvement ($p < .01$). Controlling for other variables, youth who received life skills instruction were 8.79 times more likely to have attended postsecondary education than youth who did not receive life skills instruction ($p < .01$). Holding other variables constant, youth who received interagency involvement were 0.07 times as likely (or 15.10 times less likely) to have attended postsecondary education than youth who did not receive interagency involvement ($p < .01$). With other variables held constant, youth with high functional academic skills were 46.20 times more likely to have attended postsecondary education than youth with low functional academic skills ($p < .01$). The remaining two best practice school program variables were not significant but are of interest: youth who experienced youth involvement were 2.0 times more likely to have attended postsecondary education than youth who had not experienced youth involvement (p=.49), and youth who received work experiences were 0.24 times as likely

(or 4.23 times less likely) to have attended postsecondary education than youth who did not receive work experiences (p=.04) with all other variables held constant (p=.49).

Four-year enjoyment of life. The model containing characteristics and best practice school program variables was significant (χ^2 (7, N =60) = 33.55, p < .001, see Table 39). The range of values for pseudo R^2 was 0.362 to 0.560. The model correctly classified 92.5% of youth who reported enjoying life and 64.3% of youth who reported not enjoying life, for an overall correct classification of 86.5%. The χ^2 difference test was significant (χ^2_{diff} = 27.00, p < .001). Two predictors were significant. With all other variables held constant, youth who received work experiences were 0.05 times as likely (or 19.46 times less likely) to report enjoying life than youth who did not receive work experiences (p<.01). Controlling for other variables, minority youth were 0.09 times as likely (or 11.63 times less likely) to report enjoying life than youth who were white (p=.01). Three other best practice school program variables are of interest. Holding all other variables constant, youth who received family involvement were 5.57 times more likely to report enjoying life than youth who did not receive family involvement (p=.06). Controlling for other variables, youth who received life skills instruction were 0.25 times as likely (or 3.99 times less likely) to have reported enjoying life than youth who did not receive life skills instruction (p=.17). Finally, with other variables held constant, youth who experienced interagency involvement were 12.35 times more likely to have reported enjoying life than youth who did not experience interagency involvement (p=.04).

Four-year social inclusion. The combination of characteristics and best practice school program variables significantly predicted 4-year social inclusion outcomes (χ^2 (8, N =80) = 23.14, p < .01, see Table 40). The range of values for pseudo R^2 was 0.158 to

0.241. The combination of predictors correctly classified 93.4% of youth who were socially included but only 30.8% of youth who were not socially included, with an overall correct classification of 77.7%. The χ^2 difference test was not significant (χ^2_{diff} = 8.76, p=.12). Only one predictor was significant. Youth who received work experiences were 0.25 times as likely (or 3.98 times less likely) to be socially included than youth who did not receive work experiences with all other variables held constant ($p < .01$). Two additional best practice school program variables were not significant but are of interest. With all other variables held constant, youth who experienced family involvement were 0.56 times as likely (or 1.80 times less likely) to have been socially included that youth who did not experience family involvement (p=.41), and youth who received interagency involvement were 2.10 times more likely to have been socially included than youth who did not receive interagency involvement (p=.31).

Overall. For all outcomes, combinations of characteristics and best practice school program variables significantly predicted the outcome ($p < .01$). The values for pseudo R^2 ranged from a low of 0.158 for 4-year social inclusion outcomes to a high of 0.665 for 4-year postsecondary education outcomes. Furthermore, the addition of the five best practice school program variables contributed to a significant improvement in the prediction of both 2-year and 4-year employment, postsecondary education, and enjoyment of life outcomes ($p \leq .01$). Four of the best practice school program variables (family involvement, work experiences, life skills instruction, and interagency involvement) were found to be significant predictors of at least one outcome ($p < .0125$), although receiving these variables was sometimes associated with less successful postschool outcomes. In the final models, characteristics variables including functional

academics, ethnicity, parent expectations for employment and postsecondary education, family income, and urbanicity of the school attended were all found to be significant predictors of postschool outcomes.

Summary of results for purpose 3. Do the results support the initial hypotheses for research questions (3a) and (3b)? The answer to this question is a tentative yes, for most outcomes. Table 41 shows the predictors that were found to have statistical or practical significance (odds ratio of greater than 2 or less than 0.5) in each of the 2-year and 4-year models, and Table 42 summarizes the important predictors in the final models. In regard to research question (3a), combinations of characteristics variables were found to significantly predict all outcomes with the exception of 2-year and 4-year enjoyment of life. In regard to research question (3b), the addition of five best practice school program variables led to a significant improvement in the prediction of all outcomes with the exception of 2-year and 4-year social inclusion. However, the hypothesized pattern of receiving best practices being associated with more successful postschool outcomes was not observed. Furthermore, receiving certain best practices was in some places associated with more successful postschool outcomes yet in other places associated with less successful postschool outcomes. Across three of the outcomes (2-year employment, 2-year postsecondary education, and 4-year employment), parent expectations for employment was the strongest predictor of postschool success.

Summary

This chapter provided results for each of the descriptive, comparative, and predictive research questions. The pattern of results supported the initial hypotheses to some extent, although there were some results that did not match the initial hypotheses.

Several issues were encountered in analyzing the data selected for this study. In the next chapter, these results and limitations will be discussed and interpreted in greater detail.

Chapter 5

Discussion

Summary of Overall Findings

This study was designed to address several gaps in the literature on the transition to adult life of youth with intellectual disabilities. This was the first study that examined whether recommended best practices for transition are predictive of successful postschool outcomes in multiple domains specifically for youth with intellectual disabilities. The National Longitudinal Transition Study-2 (NLTS2) dataset was analyzed as it provided a recent, national picture of the transition experiences of youth with intellectual disabilities. Parent, teacher, and youth responses to survey questions were used to provide information on the in-school and postschool experiences of a sample of youth with intellectual disabilities who had left school between 2003 and 2007 and who were followed for up to 4 years into adulthood. Seven best practices recommended by researchers and professionals in the field of transition were examined and postschool outcomes in four domains were measured. Through secondary analysis of this dataset involving crosstabulation, chi-square, and logistic regression analyses, three research questions were addressed.

The first research question asked to what extent youth with intellectual disabilities were receiving each of the seven best practices. For all but one of the best practice variables, the findings equaled or exceeded the hypothesized predictions. Almost all youth received transition planning and greater than 40% of youth experienced youth involvement, work experiences, life skills instruction, inclusion in general education, and interagency involvement while in school. Although family involvement was lower than

expected, almost 70% of youth experienced family participation in the development of postschool goals. The second research question asked whether significant differences existed in whether youth received each best practice school program variables based on individual, family, and school characteristics. Differences were hypothesized in the percentage of youth who were found to be receiving each of the seven best practices based on a number of characteristics, yet no statistically significant differences were found for three of the seven best practices (family involvement, transition planning, and life skills instruction). For the remaining four best practices (youth involvement, work experiences, inclusion in general education, and interagency involvement), a number of variables were found to be associated with significant differences in the proportion of youth who had received each of the best practices (see Table 22). However, no discernible pattern that suggested that youth with certain characteristics would be more likely to receive *all* of the best practices than youth with other characteristics was found in the results.

The third research question examined, first, whether the characteristics of youth predicted postschool outcomes in the areas of employment, postsecondary education, enjoyment of life, and social inclusion at up to 2 and 4 years out of high school; and second, whether best practices predicted these outcomes after controlling for characteristics. Certain characteristics of youth, their families, and the schools they attended were found to be significant predictors of all outcomes except for the 2-year and 4-year enjoyment of life outcomes. After controlling for these characteristics, best practices were found to be significant predictors of all outcomes except for the 2-year and 4-year social inclusion outcomes. Not all of the best practices were predictive of more

successful outcomes as hypothesized, as receiving some of the best practices was found the be predictive of less successful outcomes in some domains. In the final models, parent expectations for employment and postsecondary education were some of the strongest predictors of successful postschool outcomes.

Before analyzing these findings in greater depth, it is important to understand some of the major limitations of this study. First, this study conducted secondary analysis of data from an existing study. Decisions regarding variables to include in this study were made based on availability of variables measured in the NLTS2 and their perceived match with the constructs of interest in the present study. As it was not possible to design survey questions that matched the best practices and characteristics that were of interest in this study, the variables included in this study were not always measured in an ideal manner. Additionally, the large scope of the NLTS2 meant that there was often limited depth in the questions asked about a particular school practice. This meant that there was often little choice in the variables that could be utilized in the present study. Second, the NLTS2 collected data solely through surveys of parents, youth, and teachers (although there was also some analysis of IEP documents, these data were not available at the time of the present study). It is not known whether information provided on school programming, characteristics, and postschool outcomes was a reliable measure of the actual experiences and outcomes of these youth. Third, the original study did not involve experimental manipulation of any of the school program variables. The NLTS2 was designed only to describe the experiences of youth with disabilities as they transitioned to adulthood. As the NLTS2 and the present study are nonexperimental studies, no statements of causality can be made based on the findings.

With these limitations in mind, the remainder of this chapter will provide greater analysis of the findings and implications of the study. The findings for each research question will be discussed first. Then, some additional limitations and the significance of the study will be described in greater detail. Finally, implications for future research and practice will be provided.

Findings of the Study

Sample characteristics. Before examining the results of each research question, the characteristics of the sample of youth with intellectual disabilities in the present study are compared to data from the NLTS2 on the characteristics of youth with intellectual disabilities and youth with other disabilities. Comparison data were taken from several publications from SRI International, including a data brief by Wagner, Cameto, and Guzmán (2003) and a factsheet ("Facts from NLTS2") published in 2005. The sample selected for the present study included approximately 490 youth who were reported by either parents or schools to be diagnosed with mental retardation and who had information on a number of variables that were necessary to be able to determine after which wave of data collection they left school. The youth in this sample were approximately evenly distributed on the variables of gender, functional academics, and self-determination. In comparison to data on the characteristics of transition-age youth from the NLTS2, a higher proportion of youth in this sample were nonwhite (46.4%) than youth with disabilities who had participated in the NLTS2 (38%) and youth in the general population (37%; Wagner et al., 2003), suggesting that this sample of youth with intellectual disabilities was more ethnically diverse than the population of youth with other disabilities or youth in general. A large majority of youth had completed high

school (80%), a finding that was slightly higher than youth with intellectual disabilities in previous reports from the NLTS2 (e.g., 72%; "Facts from NLTS2," 2005) and that is to be expected given that youth who were excluded from the sample because they had left school by Wave 2 were more likely to have dropped out than youth who were retained in the sample. Most of the youth in this sample (90%) were rated to have high adaptive behavior skills, an indication that this variable may not have been an accurate measure of this construct as limitations in adaptive behavior are a defining characteristic of intellectual disabilities. Adaptive behavior comprises multiple skills across the domains of conceptual, social, and practical skills (AAIDD, 2010), yet the adaptive behavior variable in the present study was formed from two survey questions that asked only about practical skills. Therefore, this variable was likely an incomplete measure of youth's adaptive behavior. Parent expectations were high for employment (85% said their child definitely or probably would be employed) but were less optimistic for postsecondary education (38% said their child definitely or probably would attend postsecondary education).

There were no differences in the household characteristics of the sample of youth with intellectual disabilities who were included in the study compared to the youth with intellectual disabilities in the NLTS2 who were not included in this study, indicating that the present sample was representative of the population of transition-age youth with intellectual disabilities on these characteristics. However, there were some important differences between the present sample and both youth with other disabilities in the NLTS2 and with the general population. In an analysis of the characteristics of youth in the NLTS2, Wagner et al. (2003) suggested that youth with intellectual disabilities have

"a cluster of household characteristics that could be risk factors for poor outcomes" (p. 3). In the sample for the present study, 48% of youth with intellectual disabilities were found to be from families whose income was less than $25,000 per year, compared to 37% of youth with all disabilities in the NLTS2 and 20% of youth in the general population (Wagner et al., 2003). Of the youth with intellectual disabilities in the present study, 38% had parents who were unemployed, compared to 17% of youth with disabilities in the NLTS2 and 11% of youth in the general population (Wagner et al.). Additionally, 36% of youth with intellectual disabilities in this study had parents who had high school or less education. The high prevalence of these less favorable family characteristics suggests that the sample of youth with intellectual disabilities may have been predisposed to experience additional barriers in achieving successful postschool outcomes.

In the most recent report of findings from the NLTS2, Newman, Wagner, Cameto, and Knokey (2009) examined the outcomes of youth with all disabilities who were up to 4 years out of high school, compared these outcomes to youth in the general population, and provided separate estimates for the sample of youth with intellectual disabilities. Outcomes found for the sample youth with intellectual disabilities in the present study were approximately equivalent to those found for youth with intellectual disabilities in the NLTS2 (Newman et al., 2009), and as expected, these outcomes indicated students were less successful than youth with other disabilities and youth in the general population. Of the youth with intellectual disabilities in the present sample, 17.8% had attended postsecondary education up to 2-years out of high school and 34.5% between 2 and 4-years out of high school, compared to 27.4% of all youth with intellectual

disabilities and 44.7% of youth with all disabilities in the NLTS2, and 53.0% of youth in the general population who were up to 4 years out of high school (Newman et al., 2009). An increase in the percentage of youth who had attended postsecondary education would be expected as the variable in the present study asked whether youth had attended postsecondary education *at any time* since leaving high school. Still, this increase in attendance was not equivalent to youth with other disabilities or without disabilities.

With regard to social inclusion, 55.9% of youth in the present sample who were up to 2 years out of high school and 71.5% of youth who were between 2 and 4 years out of high school reported seeing friends at least weekly, compared to 69.0% of all youth with intellectual disabilities and 86.6% of youth with all disabilities in the NLTS2 (Newman et al., 2009). This increase in social inclusion is promising, although youth with intellectual disabilities were still not socializing as much as their peers with other disabilities. Of youth in the present sample, 72.4% reported enjoying life at up to 2 years out of high school and 74.2% between 2 and 4 years out of high school, suggesting there the majority of youth with intellectual disabilities enjoyed their lives and that there was little change in life enjoyment over time. No comparisons to youth with other disabilities or the general population are possible for this variable.

With regard to employment, youth in the present sample were somewhat more likely to be employed at up to 2 years (41.8%) and between 2 and 4 years (41.4%) out of high school compared to youth with intellectual disabilities in the sample analyzed by Newman et al. (2009) (31.0%), but were still much less likely than youth with any disabilities (56.8%) or youth in the general population (66.4%) to be employed in the early postschool years. It is interesting that there was little change between in the

employment rate at 2-years and 4-years out of high school for youth with intellectual disabilities in this sample as other studies have found increases in the rates of employment of youth with intellectual disabilities as the amount of time out of high school increases (e.g., Blackorby & Wagner, 1996). This finding may be due to the relatively high rate of employment of youth in the sample at 2-years out of high school compared to youth with intellectual disabilities who had been out of high school for a similar amount of time in other studies (e.g., Blackorby & Wagner; Wagner, Newman, Cameto, Garza, & Levine, 2005).

In sum, the characteristics of the sample for the present study were approximately representative of the population of transition-age youth with intellectual disabilities. The postschool outcomes experienced by youth with intellectual disabilities in this sample were approximately equivalent for social inclusion and more successful for employment and postsecondary education than the outcomes for all youth with intellectual disabilities in the NLTS2. These higher rates of success may be attributable to the selection of youth who remained in school and did not drop out before the first wave of data collection. Therefore, the results of this study could generalize to transition-age youth with intellectual disabilities who do not drop out of high school too early to have experienced some transition programming.

Extent of receiving best practices. The first purpose of this research study was to examine the extent to which youth with intellectual disabilities were receiving each of seven best practices. These best practices were identified based on recommendations made by researchers and professionals in the field of transition, and corresponding indicators in the NLTS2 dataset were identified. In general, youth with intellectual

disabilities were reported by teachers and parents to have received these best practices at rates that were equal to or greater than what was hypothesized. Almost all youth (96.9%) were reported to have received transition planning. This is a promising finding given that previous estimates based on NLTS2 data have found that 88% of youth with intellectual disabilities had received transition planning (e.g., Katsiyannis, Zhang, Woodruff, & Dixon, 2005). Almost three-fourths of youth were reported to have received life skills instruction. This is in line with estimates from previous analyses of the NLTS2 for youth with intellectual disabilities (e.g., Yu, Newman, & Wagner, 2009). More than half of youth with intellectual disabilities were reported by teachers to have been involved in their transition planning, a finding that is in line with previous reports from the NLTS2 and other studies that have found that about half of youth with intellectual or other disabilities provide input in their transition planning meetings and that only a handful take a leadership role (e.g., Katsiyannis et al., 2005; Zhang & Stecker, 2001). More than half of youth with intellectual disabilities were reported to have received work experiences. Previous studies have produced a wide range of estimates for the extent of use of work experiences, from 32% of youth with intellectual disabilities based on Wave 1 NLTS2 data (Marder, Cardoso, & Wagner, 2003), to 56% of youth with all disabilities based on a review of IEPs (Powers et al., 2005) and 84% of youth with all disabilities based on teacher reports (Zhang, Ivester, Chen, & Katsiyannis, 2005), and the finding in this analysis fell approximately in the middle of these estimates. Almost half of youth with intellectual disabilities were reported to be included in at least one academic general education class, a finding that is less than reported by previous reports from the NLTS2 (Yu et al., 2009) but that may have been impacted by the high degree of missing data for

this variable (only 130 of the 490 cases had data). Interagency involvement was reported for only 42.5% of youth with intellectual disabilities. This finding is in line with previous estimates from the NLTS2 for youth with intellectual disabilities (e.g., Katsiyannis et al., 2005) but is higher than estimates of involvement of adult service personnel based on reviews of IEPs (Grigal, Test, Beattie, & Wood, 1997; Powers et al., 2005). This suggests that there may be discrepancies between teacher reports of participation and actual involvement. Nonetheless, interagency involvement was the least widely implemented best practice. Family involvement was the only variable which was found to be implemented less than was hypothesized. Based on previous reports of NLTS2 data for youth with intellectual disabilities (e.g., Katsiyannis et al., 2005), family involvement was expected to be at least 80%. However, only 68.4% of youth were found to experience family involvement. This discrepancy may be explained by the source and survey question for this data. In the study by Katsiyannis et al. (2005), teacher reports of parent involvement in transition planning were used to indicate family involvement, whereas the present study used parent reports of whether teachers had contacted them to discuss postschool goals. As previous studies have suggested that a third of special education teachers may develop transition plans with little or no input from parents or students (Zhang & Stecker, 2001), it is likely that the percentage of parents who are attending transition planning meetings would not be the same as those who are contacted to provide input on postschool goals.

In summary, the results of the present study suggest that there may be some positive increases in the extent to which youth with intellectual disabilities are experiencing best practices for transition, in particular in the high proportion of youth

with intellectual disabilities who received transition planning. However, the data continue to suggest that there has been little growth in the extent of use of practices such as youth involvement, family involvement, work experiences, life skills instruction, inclusion in general education, and interagency involvement, and that use of these valued practices is not yet widespread for youth with intellectual disabilities.

These conclusions should be tempered by keeping the following limitations in mind. First, although transition planning was reported to be almost universally received, this finding does not given any indication of the quality of transition planning that was conducted, whether transition planning was individualized for each student, whether transition plans were compliant with the requirements of the law, or whether transition plans were actually implemented. If observations of transition services or reviews of transition plan documents had been the source for this variable, it is possible that the percentage of youth who had been found to experience quality transition planning would have been much lower. Second, although life skills instruction was reported to have been received by a high proportion of youth with intellectual disabilities, it should be noted that the survey question from which this variable was taken asked teachers whether the youth had received "life skills or social skills instruction." Therefore, these findings (and subsequent analyses of this variable) may be obscured by the combining of these two types of instruction into one variable. Finally, the variable created to measure youth involvement relied on teacher judgment of youth involvement; however, previous research has suggested that teachers judge youth to be participating more than they actually are. For example, Martin, Van Dycke, Greene, et al. (2006) found that in observations of IEP meetings, students with disabilities talked in only 3% of observed

intervals yet 40% of special education teachers reported that they felt that students had participated "a lot" during these meetings. As perceived involvement may be higher than actual involvement, it is likely that youth involvement was much lower in actuality than was found in this analysis. Indeed, it is possible that there was a discrepancy between teacher reports and actual implementation for all of the best practice variables. Previous research has suggested that teacher reports of their own behavior may not correspond with their actual classroom behavior and that teachers may respond to surveys in a manner that they perceive to be socially desirable (Muijs, 2006). This may have resulted in inflated estimates for all of the best practice variables.

Differences in best practices based on characteristics. The second purpose of this study was to compare the characteristics of youth who received best practice school program variables to those who did not to determine whether there was any pattern of characteristics that was associated with an increased or decreased likelihood of experiencing best practices for transition. For three of the best practice variables (family involvement, transition planning, and life skills instruction), there were no significant differences in the characteristics of youth who experienced these practices compared to youth who did not. Moreover, across 84 chi-square analyses, there were only eight statistically significant results. Although previous research has found differences in the extent to which youth experience best practices based on gender (e.g., Baer, Simmons, & Flexer, 1996; Doren & Benz, 1998; Newman, 2004; Wagner, Blackorby, Cameto, & Newman, 1993), ethnicity (Cameto, Levine, & Wagner, 2004; Newman, 2004), family income (Cameto et al., 2004; Newman, 2004 ; Wagner et al., 1993), and urbanicity (Baer et al., 1996), these findings were not supported in the present study. It is interesting that

there were no significant differences found in the likelihood of receiving any of the best practices other than youth involvement based on functional academic or adaptive behavior skills, as previous research has suggested that these characteristics are associated with the extent to which youth experience several best practices including family involvement, transition planning, work experiences, inclusion, and interagency involvement (e.g., Grigal et al., 1997; Marder et al., 2003; Newman, 2004; Yu et al., 2009). It is particularly encouraging that there were no significant differences in the family characteristics of youth who experienced family involvement compared to those who did not (as found by Newman, 2004) as this suggests that the risk factors as discussed earlier did not serve as a barrier to families participating in transition planning. The finding of few important differences between youth who received best practices for transition and youth who did not is reassuring as it implies that there is no particular group of youth that is more privileged than another in experiencing these practices.

The findings that were statistically significant mostly followed the expected pattern in that more favorable levels of these characteristics were associated with an increased likelihood of experiencing best practices. Youth who had high levels of adaptive behavior skills and whose parents expected they would be employed after high school were more likely to have been involved in their transition planning than youth who had low levels of adaptive behavior or were not expected to be employed. Previous research has also found that youth with less significant disabilities are more likely to be involved in their transition planning (Powers et al., 2005), and this suggests that youth who are perceived to be more competent may be given this opportunity more often than youth who are perceived to be less capable of participating. However, this suggests the

need to increase awareness of the importance of youth involvement and strategies to include all youth, regardless of the severity of disability, in their transition planning. Youth who had completed high school were more likely to have received interagency involvement than youth who dropped out, a finding that is supported by previous research that has found that youth who have the perceived potential to drop out of high school tend to have lower quality transition plans (Love & Malian, 1997). It may be that teachers are less motivated to contact adult service agency personnel for youth who are not planning to complete high school or that it is more difficult for these personnel to be involved in transition planning meetings for youth who are not in school. This suggests the need for involving outside agencies early on before youth drop out of high school. Youth whose parents had high expectations for employment after high school were found to be more likely to experience inclusion in general education, which may again suggest that youth who are perceived to be more competent may be more likely to be given the opportunity to access these opportunities whereas youth who are not perceived to be as competent may receive poorer educational practices. However, this finding must be interpreted with caution given the high degree of missing data for the inclusion in general education analyses.

Two findings for the comparisons of youth who received and did not receive work experiences were statistically significant and were the opposite of the initial hypothesis. Youth who had low functional academic skills and youth whose parents did not expect that they would attend postsecondary education after high school were more likely to have had work experiences than youth who had high functional academic skills or whose parents expected they would attend postsecondary education. Previous research has found

that youth with intellectual disabilities are more likely to have work experiences than youth with less significant disabilities such as learning disabilities (Marder et al., 2003) so it is reasonable to expect that even within the category of youth with intellectual disabilities there would be differences in the extent to which youth are provided these opportunities. Youth who have lower academic skills and who are not expected to attend postsecondary education would be less likely to be on an academic track in high school and may be perceived as less academically competent than youth who are expected to attend postsecondary education. Therefore, those with perceived higher competence or who need to take academic classes to prepare for college might be less likely to have work experiences (perhaps due to time constraints or the lack of recognition of the importance of these opportunities) than those with lower perceived competence. This suggests that opportunities for youth who have higher academic skills to have work experiences need to be increased, as these experiences have been proposed to be beneficial for all youth regardless of disability (Benz, Yovanoff, & Doren, 1997; Luecking & Mooney, 2002).

Predictors of postschool outcomes. The third purpose of this study was to examine whether best practices were significant predictors of successful postschool outcomes after controlling for youth, family, and school characteristics. These characteristics were entered into logistic regression analyses first to determine if characteristics alone predicted successful postschool outcomes. Several variable selection procedures proposed by Hosmer and Lemeshow (1989) were applied to reduce the large number of characteristics so that only the most pertinent factors were retained in the model for each outcome. Combinations of between three and eight characteristics

variables were found to be significant predictors for employment, postsecondary education, and social inclusion at both up to 2 years and between 2 and 4 years out of high school. This finding underscores the importance of unalterable variables in predicting postschool outcomes (Heal, Rubin, & Rusch, 1998; Heal & Rusch, 1994; Heal & Rusch, 1995). When the set of five best practices (youth involvement, family involvement, work experiences, life skills instruction, and interagency involvement) was added to these models, a significant improvement in the prediction of the outcome variable was found for 2-year and 4-year employment, postsecondary education, and enjoyment of life outcomes. The combination of characteristics and best practices significantly predicted all outcomes. This finding is similar to previous correlational studies which have found that both unalterable (characteristics) variables and alterable (best practice) variables are important for predicting postschool outcomes for youth with intellectual disabilities (e.g., Cameto, 1997; Kraemer, McIntyre, & Blacher, 2003).

Best practices. Several findings related to the best practices are of interest. Youth involvement was not a statistically significant predictor of any outcome but was found to be practically significant (odds ratio greater than 2.0 or less than 0.5) in five of the analyses. Similar to Miceli (2008), youth who were involved in their transition planning were 3 times as likely to have taken a postsecondary education class up to 2 years out of high school and 2 times as likely between 2 and 4 years out of high school than youth who were not involved. As youth who were involved in their transition planning were more likely to be expected to attend postsecondary education, this further link between youth involvement and postsecondary education is to be expected. Youth who were involved in their transition planning were also 5 times more likely to be employed

between 2 and 4 years out of high school and 3 times more likely to see friends at least weekly up to 2 years out of high school, but were also 3 times less likely to report enjoying life up to 2 years out of high school than youth who were not involved. As there has been little research on this best practice variable, these relationships need to be explored further in future research.

Family involvement was found to be significant predictor of two outcomes and an important predictor of one additional outcome. Youth who had experienced family involvement were 41 times more likely to have attended postsecondary education between 2 and 4 years out of high school than youth whose families were not involved. Although not significant, youth who had experienced family involvement were also 6 times more likely to report enjoying life between 2 and 4 years out of high school. These findings are similar to previous research that has found that family involvement is a strong predictor of positive quality of life outcomes for youth with intellectual disabilities (Kraemer et al., 2003) and a predictor of enrollment in vocational postsecondary education for youth with all disabilities (Wagner et al., 1993). However, youth who had received family involvement were also found to be 8 times less likely to be employed between 2 and 4 years out of high school than youth who had not received this variable. No negative associations between family involvement and postschool outcomes have been reported in previous research, and this finding is in contrast to Schalock et al. (1986) who found that the level of family involvement was a positive predictor of both employment and independent living outcomes. This unusual pattern of results may have been due to the manner in which family involvement was measured. The present study used parent reports of whether teachers had contacted parents to develop postschool goals

as the indicator of family involvement, whereas previous studies have used teacher reports of parent attendance at IEP meetings as the indicator of family involvement. Therefore, the extent of family involvement in the present study may have been underreported compared to studies that relied on teacher reports, yet is not exactly clear why this would lead to a negative association between family involvement and employment but not other outcomes. One possible explanation may be that youth whose families are highly involved in their transition to adulthood could perhaps be overprotected to the extent that they are not given the opportunity to explore employment, although this remains to be examined further.

Work experience was found to be a statistically significant predictor of three outcomes and to be of practical importance for three additional outcomes; however the majority of these associations were with less successful outcomes. Youth who had received work experience were four times less likely to have enrolled in postsecondary education up to 2 years out of high school, and were 20 times less likely to report enjoying life and 4 times less likely to see friends at least weekly between 2 and 4 years out of high school than youth who had not received these experiences. Although not significant, youth who had received work experiences were also four times less likely to have enrolled in postsecondary education between 2 and 4 years out of high school. Conversely, youth who had received work experiences were found to be twice as likely to see friends at least weekly up to 2 years out of high school and 5 times more likely to be employed between 2 and 4 years out of high school than youth who had not had work experiences, although neither of these findings was statistically significant. This pattern of findings was also shown by Harvey (2002) who found that vocational education was

associated with more successful employment outcomes in the areas of number of hours worked per week and hourly wages but less successful postsecondary education outcomes, and also by Baer et al. (2003) who found that several practices related to preparation for employment were predictors of successful employment outcomes but also not predictive of or negatively associated with postsecondary education. Previous research has also suggested a lack of effectiveness of vocational education for youth with intellectual disabilities (Cameto, 1997; Hasazi, Gordon, Roe, & Hull, 1985; Sitlington, Frank, & Carson, 1992). However, this study and others (e.g., Baer et al., 2003) have also found that youth who have more significant disabilities or who are not expected to attend postsecondary education are more likely to be provided with work experiences than youth with less significant disabilities or higher academic skills. The mixed findings for the association between this practice and successful postschool outcomes may be in part due to the characteristics of the youth who were receiving this practice, and the negative correlation between work experiences and postsecondary education may be explained by the higher prevalence of this practice for youth who are not expected to attend postsecondary education. The finding that work experience is predictive of employment outcomes between 2 and 4 years out of high school rather than up to 2 years out of high school is interesting as previous research has suggested that work experiences may be predictive of only short-term and not long-term employment outcomes (Luecking & Fabian, 2000).

Life skills instruction was found to be a statistically significant predictor of one outcome and an important predictor of six additional outcomes. Youth who had received life skills instruction were 9 times more likely to have attended postsecondary education

between 2 and 4 years out of high school than youth who had not received this best practice. Although not significant, youth who had received life skills instruction were found to be twice as likely to have attended postsecondary education up to 2 years out of high school. Conversely, the remaining important but nonsignificant relationships were between receiving life skills instruction and less successful outcomes. Youth who had received life skills instruction were found to be more than 2 times less likely to be employed, 3 times less likely to report enjoying life, and 2 times less likely to see friends at least weekly up to 2 years out of high school; and were 3 times less likely to be employed and 4 times less likely to report enjoying life between 2 and 4 years after leaving high school than youth who had no received this practice. A positive association between life skills instruction and postsecondary education has not been reported in previous research, and this finding may be due to the combining of life skills and social skills instruction into one variable. It is possible that youth with less significant disabilities, such as those with high functioning autism, who might be more likely to attend college than youth with more significant disabilities were judged to have received life skills instruction when in reality they were receiving social skills instruction. Furthermore, there have been mixed findings regarding the association between this variable and other postschool outcomes in previous research. For example, Cameto (1997) found that life skills instruction was positively associated with employment outcomes but negatively associated with accessing community resources, and Blackorby, Hancock, and Siegel (1993) found that life skill instruction was negatively correlated with postschool success. These findings suggest the need to more clearly define and

measure the construct of life skills instruction to determine its true effect on various postschool outcomes.

Interagency involvement was found to be a statistically significant predictor of one outcome and an important predictor of four additional outcomes, yet this variable also demonstrated a both positive and negative associations. Youth who experienced interagency involvement were 15 times less likely to have attended postsecondary education between 2 and 4 years out of high school than youth who did not experience this practice. Although not significant, youth who experienced interagency involvement were also 4 times less likely to report enjoying life up to 2 years out of high school and 2 times less likely to be employed between 2 and 4 years out of high school than youth who did not experience this practice. On the other hand, youth had received interagency involvement were 12 times more likely to report enjoying life and twice as likely to see friends at least weekly between 2 and 4 years out of high school than youth who did not have interagency involvement, although both of these findings were nonsignificant. Previous research on this best practice has been limited but has generally suggested that interagency involvement would be associated with more successful outcomes in employment (Wagner et al., 1993) and postsecondary education (Zafft, Hart, & Zimbrich, 2004). It is possible that the interagency involvement variable in this study was actually measuring the intensity of support needs of youth with intellectual disabilities, as youth who have greater support needs (and who, perhaps, may be likely to experience greater challenges in the transition to adulthood) would require greater involvement from adult service agencies. The findings of this study suggest that this relationship is more

complicated than anticipated and that better measurement of the actual involvement of adult service personnel may be warranted in future studies.

Characteristics. Several findings related to the characteristics that were found to be important in the final models are also of interest. Parent expectations for employment and postsecondary education were some of the most important predictors of postschool outcomes. Youth whose parents expected they would be employed after high school were 58 times more likely to be employed up to 2 years out and 50 times more likely to be employed between 2 and 4 years out of high school than youth whose parents did not expect they would be employed. Expectations also had a strong impact on early postsecondary education outcomes. Youth whose parents expected they would be employed were 28 times more likely to have enrolled in postsecondary education up to 2 years out than youth whose parents did not expect employment. Although not significant, youth whose parents expected they would attend postsecondary education were 3 times more likely to have enrolled in postsecondary education up to 2 years out than youth whose parents did not have these high expectations. Additionally, youth whose parents expected postsecondary education were 6 times more likely to see friends at least weekly up to 2 years out of high school. This pattern of association between parent expectations and successful postschool outcomes was also found by Miceli (2008), who found that high parent expectations for postsecondary education increased the likelihood of attending postsecondary education, and by Wagner et al. (1993), who found that high parent expectations for postsecondary education and independent living increased the likelihood of attending postsecondary education and living independently. However, unlike the present study, Wagner et al. found no significant association between parent

expectations for employment and successful employment outcomes for youth with intellectual disabilities, and no previous study has found such a strong positive association between parent expectations and postschool outcomes. In the present study, parent expectations for employment or postsecondary education were the strongest predictors for four out of the eight outcomes. This finding clearly suggests that parent expectations are an important factor in determining the postschool outcomes of youth with intellectual disabilities.

What is unclear from the present study is exactly *how* parent expectations influenced postschool outcomes and whether they were responding realistically or idealistically when answering questions about their expectations. Responding realistically would mean that parents knew their children well and could therefore make good predictions of the likelihood that their children would achieve successful postschool outcomes (in this sense, parent expectations would actually have been measuring perceived level of overall functioning). Responding idealistically would mean that parents had high hopes for their children's futures and this created the impetus for seeking out supports and services to help their children achieve these goals. Previous research has found that parents of youth with intellectual disabilities have much higher *idealistic* expectations for employment outcomes for their children than their *realistic* expectations (e.g., Chambers, Hughes, & Carter, 2004; Kraemer & Blacher, 2001). Research has also found that more parents of youth with intellectual disabilities report that college is a desired postschool outcome than parents of youth with other disabilities (Grigal & Neubert, 2004), suggesting that these parents tend to have optimism for their child's future. Having optimism and high hopes for the future could have led these

parents to fight more to obtain the services and supports their children would need to achieve these goals. However, the nonexperimental nature of this study prohibits any conclusions regarding the exact manner in which parent expectations impacted postschool outcomes, and this relationship remains to be examined in future research (see later discussion).

It is also unclear whether the time at which expectations were measured may have impacted these findings. Characteristics variables, including parent expectations, were measured at wave 2 with missing data filled in from wave 1. For most characteristics, the percentage of missing data that was imputed was less than 20%; however, for missing data was filled in from wave 1 for 42.5% of the sample for parent expectations for employment and for 66.3% of the sample for parent expectations for postsecondary education. As parents were only asked these questions in wave 2 if youth were under age 18, and as many youth would have been over age 18 by this wave, it is not surprising that such a large proportion of data needed to be filled in from the previous wave of data collection. However, it is possible that parent's responses to this question may have been influenced by the proximity to graduation of their child. For example, parents whose children were further away from graduation may have responded more idealistically whereas parents whose youth were closer to graduation may have responded more realistically. Future studies might examine whether expectations change over time and whether this impacts the prediction of postschool outcomes.

The urbanicity of the school attended by youth also had an impact on postschool outcomes. Youth who attended rural schools were 6 times less likely to have attended postsecondary education up to 2 years out of high school and were 20 times less likely to

be employed between 2 and 4 years out of high school than youth who attended urban or suburban schools. Although not significant, youth who attended rural schools were also 2 times less likely to be employed, and 5 times less likely to report enjoying life up to 2 years out of high school than youth who attended urban schools. Additional nonsignificant but important findings suggested that youth who attended urban schools were also more likely than youth who attended rural or suburban schools have attended postsecondary education and see friends at least weekly when they were between 2 and 4 years out of high school. Previous research has also found a general pattern of more successful postschool outcomes in the areas of employment and postsecondary education for youth from urban schools, with some conflicting findings regarding youth from rural or suburban schools (e.g., Baer et al., 2003; Harvey, 2002; Rabren, Dunn, & Chambers, 2002). As with parent expectations, it is unclear how urbanicity impacts postschool outcomes. It is possible that the availability of jobs, postsecondary education institutions, and transportation to get to these opportunities is the true factor that impacts outcomes rather than any inherent superiority in urban schools, yet this relationship also needs to be established through future research.

Family income was found to have an impact for youth with intellectual disabilities on employment and postsecondary education outcomes between 2 and 4 years out of high school. Youth whose families had high income (over $50,000 per year) were 16 times more likely than youth whose families had low income (less than $25,000 per year) to be employed between 2 and 4 years out of high school. Although not significant, at this time, youth whose families had medium income levels (more than $25,000 but less than $50,000 per year) were also found to be almost 4 times more likely to be employed than

youth from whose families had low income. Even though no significant relationships were found between income variables and postsecondary education, a different pattern of relationships was found between the income levels and postsecondary education: youth whose families had high income were actually almost 3 times less likely than youth from families with low income to have attended postsecondary education between 2 and 4 years out of high school, although postsecondary education was still 3 times more likely for youth whose families had medium income than youth whose families had low income. This pattern of results is different from previous research that has suggested that for youth with disabilities, high income increases the likelihood of attending postsecondary education (Harvey, 2002; Wagner et al., 1993) but decreases the likelihood of employment (Harvey, 2002). This could suggest that the impact of income is different for youth with intellectual disabilities compared to youth with other disabilities but still indicates that family income has an important relationship with postschool outcomes even when other factors are controlled for.

Ethnicity was found to impact both of the quality of life outcomes in this study. Youth who were from minority backgrounds (i.e., nonwhite) were found to be almost 12 times more likely to report enjoying life between 2 and 4 years out of high school than youth who were nonminority (i.e., white). Although not significant, youth who were from minority backgrounds (i.e., nonwhite) were also found to be 2 times more likely to see friends at least weekly up to 2 years out of high school than youth who were nonminority (i.e., white). It is interesting that ethnicity was not found to be an important predictor of any of the employment or postsecondary outcomes, as an association between being white and experiencing more successful outcomes in these areas has been found in

numerous other studies (e.g., Cameto, 1997; Benz et al., 1997; Luecking & Fabian, 2000; Miceli, 2008; Shandra & Hogan, 2008; Wagner et al., 1993). In addition, previous studies have found that ethnicity is not an important factor in predicting quality of life outcomes for youth with all disabilities. (Heal et al., 1997; Heal, Khoju, Rusch, & Harnisch, 1999). The lack of agreement between the importance of ethnicity in the 2-year and 4-year models for each of the enjoyment of life and social inclusion outcomes could indicate that this finding is an anomaly in the data for this sample.

Functional academic skills were found to be associated with employment and postsecondary education outcomes. The strongest of these associations was that youth who had high levels of functional academic skills were found to be 46 times more likely to have attended postsecondary education between 2 and 4 years out of high school than youth with low functional academic skills. Additional nonsignificant but strong relationships were found between functional academics and employment outcomes. Youth who had high levels of functional academic skills were 2 times more likely to be employed up to 2 years out and 4 times more likely to be employed between 2 and 4 years out of high school than youth with low functional academic skills. A related skill, adaptive behavior, was also found to be a nonsignificant but important predictor of employment. Youth with high levels of adaptive behavior skills were found to be 6 times more likely to be employed at 2 years out of high school than youth with low levels of adaptive behavior skills. These relationships confirm the findings of previous studies that have suggested that youth who are more competent or capable in terms of academic and self-care skills tend to experience more successful outcomes in the areas of employment and postsecondary education (e.g., Cameto, 1997; Miceli, 2008; Wagner et al., 1993).

However, the present study also found that high adaptive behavior was predictive of less successful enjoyment of life outcomes. This is in contrast to the results of Kraemer et al. (2003) who found that high adaptive behavior was predictive of more successful quality of life outcomes for youth with intellectual disabilities. This result may be explained by the incomplete measurement of adaptive behavior provided by the variable selected for this study (see earlier discussion). Furthermore, the relationship between the skills of youth with intellectual disabilities and quality of life outcomes is complicated and the two variables selected to measure the multidimensional construct of quality of life in the present study may not have captured the full construct of quality of life well enough to provide any clear conclusions.

In addition to these findings, it is interesting that several characteristics variables that have been found in previous studies to be predictive of postschool outcomes were not found to be important predictors in this study. Gender has been reported to be associated with several postschool outcomes, with some studies reporting that males experience more successful employment outcomes but less successful postsecondary education outcomes than females (Blackorby & Wagner, 1996; Newman et al., 2009) but others reporting that females experience more successful employment and social inclusion outcomes than males (Cameto, 1997). No associations were found between gender and any postschool outcomes in this study. Self-determination has been suggested to be associated with employment (Wehmeyer & Schwartz, 1997; Wehmeyer & Palmer, 2003) but was not found to be predictive of any postschool outcomes in this study. Completing high school has been found to be associated with more successful outcomes than dropping out of high school in the areas of employment and postsecondary education

(Blackorby & Wagner, 1996; Harvey, 2002; Heal & Rusch, 1995; Miceli, 2008; Shandra & Hogan, 2008; Wagner et al., 1993) but the only association (nonsignificant but large) found in this study was that youth who completed high school were 6.5 times more likely to see friends at least weekly between 2 and 4 years out of high school than youth who dropped out. The lack of prediction of postschool outcomes by variables such as gender, self-determination, or high school completion that have been found to be important in other studies is encouraging as it implies that the individual characteristics of youth with intellectual disabilities may play less of a role in determining outcomes than school programming or other characteristics.

Other findings. Several other observations in relation to the prediction of postschool outcomes are of interest. First, predictions of employment and postsecondary education were much more consistent than predictions of enjoyment of life and social inclusion. This can be seen in the correct classification rates and also in the lack of consistency in important predictors between the 2-year and 4-year outcomes for enjoyment of life and social inclusion. The classification tables for each logistic regression analysis showed that the combination of predictors in the 2-year enjoyment of life model predicted none of the cases for which youth reported that they did not enjoy life and the combination of predictors in the 4-year social inclusion model predicted only 30.8% of the cases for which youth reported seeing friends less than weekly. Across all eight of the final logistic regression analyses, the lowest percentages of correct classifications were seen for the 2-year enjoyment of life (72.4%) and social inclusion (71.7%) analyses. There was also greater consistency between the variables that were found to be important predictors in the final 2-year and 4-year employment and

postsecondary education analyses than in the enjoyment of life and social inclusion analyses. In the employment analyses, four of the five variables that were important predictors (odds ratio of greater than 2.0 or less than 0.5) of 2-year outcomes were also predictors of 4-year outcomes, and in the postsecondary education analyses, five of the seven variables that were predictors of 2-year outcomes were also predictors of 4-year outcomes. In contrast, only one of the five variables that were predictors of the 2-year enjoyment of life outcome and none of the five variables that were predictors of the 2-year social inclusion outcome were predictors of 4-years outcomes in these areas. Additionally, the best practice variables of work experience and interagency involvement were found to have conflicting relationships with the enjoyment of life and social inclusion outcomes: interagency involvement was found to be negatively associated with 2-year enjoyment of life outcomes but positively associated with 4-year enjoyment of life outcomes. Work experiences were found to be positively associated with 2-year social inclusion outcomes but negatively associated with 4-year social inclusion outcomes. This switching of the direction of the relationship between predictors and outcomes was not found for any variables in the employment or postsecondary education analyses. The lack of consistency between 2-year and 4-year enjoyment of life and social inclusion outcomes and the lack of consistent classification of cases based on the predictors for these outcomes emphasizes the challenge of measuring and predicting quality of life outcomes. Quality of life is a complicated construct to define and measure but is generally accepted to include many more domains than the two outcomes measured here (Turnbull, Turnbull, Wehmeyer, & Park, 2003). Although it was hoped that enjoyment of life and social inclusion could serve as indicators of quality of life, the lack of reliable

prediction of these outcomes suggests that these were not good indicators of the quality of life construct. The stronger predictions for employment and postsecondary education may explain the higher prevalence of studies in which these variables have been selected as indicators of postschool outcomes. If quality of life is accepted to be the most meaningful indicator of postschool outcomes as has been proposed by Halpern (1993), future studies must include measurement of all of the domains of this construct.

Second, all though it was hypothesized that all of the best practices would be predictive of successful postschool outcomes, the findings of this study did not always support this hypothesis. Indeed, as some of the best practices were found to be predictive of some less successful outcomes, it is clear that future research would need to employ more specific hypotheses in order to determine which best practices should be recommended for increasing the chances of success for which outcomes. For example, having work experiences in high school would not intuitively be linked to attending postsecondary education, so a more accurate hypothesis might be that work experiences will predict future employment but not postsecondary education enrollment. Similarly, receiving life skills instruction (rather than "life skills or social skills instruction") would be more intuitively linked with preparing for employment or other postschool outcomes but not postsecondary education enrollment. As some previous research has also found a pattern of both positive and negative associations between certain best practices and postschool outcomes (e.g., Cameto, 1997; Harvey, 2002) it remains to be confirmed which should be recommended for addressing which postschool outcomes for youth with intellectual disabilities.

Third, the present study highlights the importance of both alterable and unalterable variables in predicting postschool outcomes. Across all of the final models, variables from each of the four domains (individual characteristics, family characteristics, school characteristics, and school program variables) that formed the conceptual framework for the study (see Figure 3) were indeed predictive of postschool outcomes. The final models for five of the eight outcome variables included variables from each of these four domains and an additional two final models included variables from three of the four domains. This finding highlights the importance of a number of factors in determining the postschool outcomes experienced by youth with intellectual disabilities. In addition, the final models for all of the outcomes included at least one best practice variable, demonstrating that what the school does for transition has an important impact over the effect of unalterable characteristics alone. Furthermore, the lack of total prediction of outcomes based on the variables included in this study suggests that there are additional factors that contribute to the prediction of postschool outcomes that were not included in these analyses. These could include other variables within the existing domains (for example, transition planning and inclusion in general education, which could not be included in the logistic regression analyses, or other individual, family, youth, or school characteristics) or variables in other domains such as postschool services or nonschool supports received during transition.

Finally, the final logistic regression models predicted 4-year outcomes better than 2-year outcomes. Across all of the outcome variables, the models correctly classified a higher percentage of cases for the 4-year outcomes than for the 2-year outcomes (an average increase of about 8 percentage points between the two time points). In particular,

the best practices were more important in predicting 4-year outcomes than 2-year outcomes. In the 2-year models, between one and three best practices (average = 2.5) were found to be important predictors of postschool outcomes, whereas in the 4-year models, between two and five (average = 4) best practices were important. This finding is in contrast with the findings of Luecking and Fabian (2000) who found that variables related to work experience were predictive of positive early postschool outcomes but that this strength of this relationship decreased over time. The finding of the present study may suggest that examining outcomes up to 2 years after youth leave high school may be too soon to determine the effect of school program practices for youth with intellectual disabilities (as these youth may not have found employment or enrolled in postsecondary education so soon after leaving high school, in particular if they have not yet secured adult services to assist them in doing so), but this remains to be examined further.

Limitations of the Study

This study provided a comprehensive examination of the use of best practices for youth with intellectual disabilities using a large-scale, longitudinal dataset. However, the study had several limitations that must be acknowledged. To reiterate the primary limitation discussed at the beginning of this chapter, the study conducted a secondary analysis of a nonexperimental research study. This meant that, as with previous correlational and comparative research, causal relationships between characteristics, best practices, and outcomes could not be established. However, this is a limitation of all existing research in the field of transition that will not be addressed until experimental research on the effect of in-school practices on postschool outcomes is conducted (Test, Mazzotti, et al., 2009).

A limitation of using a large-scale existing dataset such as the NLTS2 is that the research questions of the study may not match the variables that are available in the dataset (Diemer, 2008). In the present study, the availability of variables that matched the constructs of interest presented several limitations that may have influenced the results. Selecting variables to represent the best practices was particularly challenging as the NLTS2 was designed to measure a wide range of aspects of school programming and not specifically the use of best practices for transition. This challenge is highlighted in the availability of variables to assess whether youth received life skills instruction. As the only survey question that addressed this best practice asked whether youth had received "life skills or social skills instruction," clear examination of the association between life skills instruction and postschool outcomes was not possible. A related issue was experienced with the best practice variable of family involvement. In the present study, the intent of examining best practices was to target what schools did to transition youth to adult life. For family involvement, the variable of interest was whether schools made efforts to involve families in transition planning. However, the school program survey did not include a question that asked about whether parents had been contacted to develop postschool goals. Instead, this variable could only be measured by using the parent report of whether teachers had contacted them to discuss postschool goals. This may not have been a valid indicator of family involvement if the parent answering the questions did not know if the teacher had contacted another family member or if the parent had not been interested or available to respond to the teacher's invitation. Issues with survey questions that were used as indicators of best practices such as those for life skill instruction and family involvement may mean that the variables selected were not the best indicators of

true best practice use, and it is again important to emphasize that the variables selected did not provide any indication of the quality or amount of a best practice that was received by youth with intellectual disabilities.

The variables selected to measure outcomes may also have affected the findings of the study. Harvey (2002) found that the best practice of vocational education was not a predictor of whether youth were employed or not employed, but that it was a predictor of the number of hours worked and the wages earned by youth with disabilities. It is therefore possible that selecting different survey questions as the outcomes for these analyses may have changed which best practices were found to be important predictors. Similarly, the lack of continuous data for outcome variables reduced the postschool outcomes into dichotomies that may not have truly indicated whether youth had achieved success in each of these areas. For example, measuring employment as a dichotomy meant that youth who were working in less desirable, segregated work settings such as sheltered workshops, were considered to have achieved a successful employment outcome. The development of scales of success in the areas of employment, postsecondary education, and quality of life, such as the scale of residential independence developed by Heal and Rusch (1994), may have provided a more valid measure of whether success had been achieved. However, this approach brings about its own limitations as it is challenging to decide what outcome should be considered more successful than others. Measuring postschool outcomes in a manner that captures all relevant data and that represents valid measures of success is a challenging task with no clear solution.

The variables selected to measure characteristics and to select youth for this sample may also have impacted the findings of the study. Youth were identified as having intellectual disabilities solely on the basis of parent report or school district designation of mental retardation. As there was no other way to verify disability, this may have meant that some of the participants in this study did not truly have intellectual disabilities and could also have meant that some youth in the original sample who had intellectual disabilities were excluded. Additionally, as the NLTS2 was designed to gather information on the characteristics of youth with all disabilities and not youth with intellectual disabilities specifically, characteristics such as functional academics and adaptive behavior that are important for describing youth with intellectual disabilities were not assessed as comprehensively as would have been ideal. As these measures had to be derived from survey questions that asked about related skills, it is possible that the characteristics of youth in this sample would have differed if more comprehensive measures had been used.

A related issue is the reliance on parent and teacher reports to measure a number of variables. All information for characteristics variables came from parents. Research has shown that there may be disagreement on characteristics or behaviors between parents and teachers (Murray, Ruble, Willis, & Molloy, 2009), between parents and children (Upton, Lawford, & Eiser, 2008), and even between parents (Langberg et al., 2010). Furthermore, as research has shown that measurement of students' abilities is more accurate than teacher reports of abilities (Cabell, Justice, Zucker, & Kilday, 2009), the lack of direct assessment of the characteristics and skills of youth in this sample may have provided inaccurate information for the characteristics variables. Similarly, relying

on teacher reports to determine whether youth received best practices may have provided inaccurate estimates if teachers had provided socially desirable responses rather than accurate responses to the school program survey (Muijs, 2006). The reliance on parent and teacher reports rather than direct measurement or observation is a significant limitation of the study.

In addition to the selection of variables from the NLTS2, there were several limitations to the procedures and analyses used in this study. First, the recoding of variables into dichotomous variables as was required for the chi-square and logistic regression analyses may have caused important information to be lost. Second, the use of SPSS Complex Samples to analyze the data, although appropriate for a complex survey design, prevented the examination of typical logistic regression statistics such as the likelihood ratio test. Statistical modeling software such as SUDAAN or Stata may have been more useful for this purpose (Diemer, 2008). Third, the Wald χ^2 statistic that was used to identify significant predictors may have been too conservative for this purpose (Agresti, 2007).

The amount of missing data present additional limitations for the study and may have impacted the findings. According to Diemer (2008), "There are […] many 'opportunities for missingness' in a large scale survey that queries participants, their teachers, [and] their parents" (p. 49). The amount of missing data for the inclusion in general education variable led to questionable estimates in the chi-square analyses and meant that this variable could not be included in the logistic regression analyses. The pattern of missing data for the 2-year enjoyment of life outcomes suggested that youth who were included in these analyses were more capable and more likely to be from urban

or suburban schools than youth who were excluded due to missing data. Although the steps taken to address missing data, such as filling in missing values in characteristics and best practice use from the previous wave of data collection and applying weights to correct for instrument nonresponse, may have dealt with some of the problems caused by missing data, this issue may still have impacted the pattern and reliability of the results of the study.

Finally, there are many other influences on the postschool outcomes of youth with intellectual disabilities that were beyond the scope of this study. These include school- or state-level practices such as business and industry linkages with schools (Greene, 2009), systems change strategies (Flexer & Baer, 2008), and ensuring qualified personnel and adequate resources (Kohler & Field, 2003). Additionally, as stated by Wagner et al. (1993) in an analysis of the NLTS, "the puzzle of postschool outcomes, as set out here, has a missing piece – the adult service system. Leaving secondary school does not necessarily mean that youth with disabilities have received the last professional help they can get to help them in transition" (p. 7-15). Clearly, there are many other influences on the postschool outcomes of youth with intellectual disabilities that were not examined in this study. The transition to adult life involves a complex set of interrelated variables, and it is challenging to examine the impact of all of these influences within one study. The present study is limited in that it only examined a subset of all of the potential influences.

Significance of the Study

Despite these limitations, this study addressed some important gaps in the literature on transition for youth with intellectual disabilities. This was the first study to examine the relationship between best practices and postschool outcomes specifically for

youth with intellectual disabilities. This was also one of the first studies to use NLTS2 data to examine the prediction of postschool outcomes. The studied attempted to measure meaningful quality of life outcomes and measured outcomes at two points in time. The findings of this study have many important implications for practice and research.

Implications for practice. The purpose of this study was to examining existing, nonexperimental data to begin to identify what might work for improving postschool outcomes for youth with intellectual disabilities. This study found that both unalterable characteristics and alterable school practices are predictive of postschool outcomes for youth with intellectual disabilities. Most importantly, the findings of the study suggest that best practices have a significant additive effect over and above the effect of characteristics on postschool outcomes. These predictions were stronger and more consistent for employment and postsecondary education outcomes, but the difficulties associated with measuring quality of life outcomes may make it challenging to find a meaningful connection between in-school practices and postschool outcomes. However, there were differences in the strength and direction of the relationships between each of the best practices and postschool outcomes. These variations echo the findings of the earliest analyses of these relationships using the NLTS, such as those of Wagner et al. (1993) who concluded:

> The differences in relationships between postschool outcomes and various explanatory factors […] demonstrate that there is no single answer to the question 'what works?' in secondary school programming for young people with disabilities. We have shown that some aspects of school programs 'work' in that

> they appear to contribute to positive postschool outcomes, but often for only some kinds of youth and some of the outcomes (Wagner et al., 1993, p. 7-14).

Perhaps the most important implication for teachers and other professionals involved in providing transition services to youth with intellectual disabilities is that there may be no universal recommendations made about transition programming that will lead to successful outcomes for all youth. Instead, consideration must be given to the postschool goals of the youth and his/her family in order to determine what practices will be needed to achieve these goals. Individualized planning and individualized transition services would appear to be essential. Furthermore, researchers should perhaps move away from making sweeping statements about, for example "the importance of employment experience opportunities for adolescents with disabilities" (Landmark et al., 2010, p. 172), and instead make specific recommendations for specific outcomes based on the postschool goals of youth with disabilities.

The overwhelming impact of parent expectations on postschool outcomes also has important implications for professionals involved in transition. Although we cannot determine from these findings whether having high expectations *caused* youth with intellectual disabilities to achieve more successful outcomes than having low expectations, research on the impact of teacher expectations suggests that there may be a causal relationship. For example, research has shown that teachers tend to act on their initial expectations of the abilities of students by providing lower quality instruction to students who they perceive to be low achievers, and that, in turn, students respond to lower expectations by showing less effort and therefore achieving less (Good, 1987; Gottfredson, Marciniak, Birdseye, & Gottfredson, 1995). With this in mind, it would

appear beneficial for teachers and other school professionals to work to increase the expectations that parents (and, indeed all professionals) have for each child.

When parents learn that their child has an intellectual disability, they are often given little hope for the future and many report grieving for the loss of potential of their child and developing fears and worries about the future (Heiman, 2002; Kearney & Griffin, 2001). Educating parents from when their child is young about the many individuals with intellectual disabilities who complete high school, go to college, work in competitive jobs, and live on their own with support could have an enormous impact of the lives of individuals with intellectual disabilities. Many parents of children with intellectual disabilities report optimism for the future (Heiman, 2002) so it must be the task of educational and medical professionals to ensure that this optimism is supported throughout the transition to adulthood.

Implications for research. Almost 20 years ago in the conclusions to their analysis of the NLTS, Wagner et al. (1993) concluded that the pattern of relationships between characteristics, school program variables, and postschool outcomes needed to be examined in greater detail in future studies. Since this time, a number of correlational studies have been conducted, yet researchers still cite the need to conduct more research in this area to determine exactly what should constitute best practice (Test, Mazzotti et al., 2009, Landmark et al., 2010). If the current movement toward identifying and implementing evidence-based practices continues to grow, we must do a better job of conducting research in the field of transition. Experimental research on the effects of in-school practices on postschool outcomes, including measurement of the quality of implementation and utilizing a number of meaningful outcomes measured for several

years into adulthood, is highly desirable in order to begin to establish causal relationships. However, this type of research may not be possible given the complexity of the influences on postschool outcomes for youth with intellectual disabilities and the amount of time that would be required to conduct such research. Further nonexperimental research will be more practical, but to truly add to the evidence base, several recommendations should be followed to improve the usefulness of these studies.

First, although large-scale, multipurpose research studies such as the NLTS2 provide a wealth of information about the experiences of youth with disabilities as they transition to adult life, these studies may be too broad to answer specific questions about the effectiveness of transition practices. Therefore, a first step toward improving the research in this area would be to design a research study that is specifically designed to measure the use and impact of best practices in transition. A study designed to meet this specific purpose would be better suited to analyze the associations between best practices and postschool outcomes and would eliminate the problems of selecting variables to match constructs that were not the intention of the original study. Second, this type of research study should include observation of best practices and direct measurement of characteristics and outcomes rather than relying on solely on teacher or parent reports. Through observational measures, it would be possible to assess the quality of implementation of best practices and verify the characteristics of participants. Third, the outcome measures that are selected for this type of study must include measurement of multiple domain areas and must include more comprehensive measurement of quality of life. Fourth, this type of research study must include variables from other domains such as nonschool factors (e.g., supports provided at home, extracurricular activities) and

postschool services (e.g., supports for finding and maintaining employment, supports for community inclusion). Including these variables in the analyses will help to explain more fully the pattern of variables that contributes to postschool success. Fifth, the associations between best practices and each postschool outcome domain must be further examined so that we can begin to say with certainty *which* best practices are effective for *which* outcomes. It will also be necessary to continue to research whether these associations differ for youth with various disabilities or other characteristics. Finally, future research studies should plan to use more sophisticated analyses such as structural equation modeling or latent growth modeling and employ statistical software programs such as SUDAAN and Stata that have been specifically designed to analyze large-scale, complex survey designs in order to examine more completely the many variables that are involved in predicting postschool outcomes (Diemer, 2008).

There may also be a place for other types of research in analyzing the transition to adult life for youth with intellectual disabilities. Given the number of nonexperimental quantitative research studies that have been conducted and both the number of issues with these studies and the lack of conclusive findings, it is reasonable to wonder whether we can ever capture and explain the complex interrelated variables that make up the transition to adult life through numbers and statistical modeling. Qualitative research may prove to be valuable in examining the perspectives of multiple transition stakeholders on what constitute best practices for transition for youth with intellectual disabilities. The few qualitative studies in this area have primarily examined the barriers experienced by youth with intellectual disabilities during transition and in adulthood or have asked parents what would have been helpful (e.g., Chambers, Hughes, & Carter, 2004; Cooney,

2002) so future studies could examine more specifically what youth, parents, and teachers say they have found to be effective for transition.

However, it is also worth considering whether it matters that we have not yet conducted high quality studies of the effectiveness of best practices in improving postschool outcomes. Do we need conclusive research in order to implement practices that are intuitively beneficial for many students? Response to intervention as a whole has not necessarily shown to be "effective" but research on its component parts and enthusiasm for its benefits has been enough to provide support for implementing this approach (Sparks, 2011). If researchers and professionals in the field of transition agree (as would appear to be the case) that certain practices (among them youth involvement, family involvement, transition planning, work experiences, life skills instruction, inclusion, and interagency involvement) constitute our best ideas about what should work to lead youth on the path to success, perhaps our efforts would be better put into researching effective strategies for increasing or improving the implementation of these practices. This issue remains to be resolved.

Summary

In this study, the use of best practices for transition for youth with intellectual disabilities and the association between these practices and postschool outcomes was examined by analyzing data from the NLTS2. This was the first study to examine the association between several best practices and postschool outcomes specifically for youth with intellectual disabilities using recent national data. The results of this study suggest that receiving best practices might lead to more successful outcomes, but these relationships were much more complicated that initially hypothesized. If the field of

transition continues to seek evidence-based practices to be able to determine and recommend what works, for what kinds of youth, and for what outcomes, future research will need to address a number of complicated issues.

Table 1

Recommended Best Practices for Transition

Practice	Bambara, Wilson, & McKenzie (2007)	Flexer & Baer (2008)	Greene (2009)	Kohler & Field (2003)	Wehman (2006)
1. Youth involvement	Cultivate student involvement and self-determination	Student self-determination	Student self-determination and advocacy	Student-focused planning (student participation in planning and decision making)	Self-determination Student involvement in transition planning
2. Family involvement	Promote family involvement and partnerships	Family/parent involvement	Family/parent involvement	Family involvement	Partnership with parents
3. Individualized planning for transition	Create a student-centered transition plan	Person-centered and backward planning Ecological approaches	Person-centered/ student-focused planning	Student-focused planning (development of student's goals based on relevant assessment information)	Individualized and person-centered planning
4. Preparation for employment	Facilitate work-based learning experiences	Community-based learning experiences (paid work experience, career education)	Career and vocational assessment and education Competitive paid work experiences	Student development (employment and occupational skills, work-based learning experiences)	Career exploration Community-based vocational training

5.	Preparation for independent living	Align school curriculum with visions for adult life (access to functional curricula)	Community-based learning experiences (residential and recreational)	Functional life skills curriculum and community-based instruction Social and personal skills development and training	Student development (development of life skills)	Functional community skills and community-based instruction Social skills training
6.	General education participation and inclusion	Align school curriculum with visions for adult life (access to general education curriculum)	Supports for postsecondary education	Integrated schools, classrooms, and employment Postsecondary education participation and supports		Opportunities for inclusion Academic preparation when postsecondary education is a goal
7.	Interagency collaboration	Establish interagency collaboration	Service coordination	Interagency/ interdisciplinary collaboration	Collaborative service delivery	Interagency transition team
Others			Access and accommodation strategies Systems change strategies	Business and industry linkages with schools	Program structure (community-level strategic planning, mission and values, qualified staff, sufficient resources)	

Table 2

Groups Excluded From or Included In Analyses

Group	Wave 1	Wave 2	Wave 3	Wave 4	Included or excluded?	Analyses
1	Missing	Missing	Missing	Missing	Excluded	-
2	In	Out	-	-	Excluded	-
3	In	In	In	In	Excluded	-
4	In	In	Out	In	Excluded	-
5	In	In	Out	Out	Included	Descriptive Comparative Predictive up to 2 years Predictive between 2 and 4 years
6	In	In	In	Out	Included	Descriptive Comparative Predictive up to 2 years

Note. Missing = data to indicate whether youth were in school were missing; In = youth were in school; Out = youth were out of school. Included = included in the analyses. Excluded = excluded from the analyses.

Table 3

Comparison of Sample of Included Cases and Sample of Excluded Cases

Variables	n^a	Included in sample		χ^2	*p*
		Yes	No		
		Best Practices			
Youth involvement (wave 2)	500				
Yes		63.3% (4.5%)	47.8% (4.5%)	12.04	.02
No		36.7% (4.5%)	52.8% (4.5%)		
Family involvement (wave 2)	930				
Yes		70.2% (2.7%)	65.2% (2.6%)	2.69	.16
No		29.8% (2.7%)	34.8% (2.6%)		
Transition planning (wave 2)	550				
Yes		97.3% (1.3%)	93.3% (2.6%)	5.16	.12
No		2.7% (1.3%)	6.7% (2.6%)		
Work experiences	510				
Yes		66.1% (5.0%)	57.6% (4.1%)	3.85	.20
No		33.9% (5.0%)	42.4% (4.1%)		
Life skills instruction (wave 2)	580				
Yes		71.7% (4.2%)	75.1% (3.1%)	0.86	.50
No		28.3% (4.2%)	24.9% (3.1%)		
Inclusion in general education (wave 2)	250				
Yes		37.3% (8.3%)	45.6% (5.9%)	1.74	.33
No		62.7% (8.3%)	54.4% (5.9%)		
Interagency involvement (wave 2)	510				
Yes		37.3% (5.1%)	39.9% (4.3%)	0.34	.68
No		62.7% (5.1%)	60.1% (4.3%)		
		Youth Characteristics			
Gender (wave 2)	1080				
Male		59.1% (2.8%)	55.8% (2.9%)	1.21	.41
Female		40.9% (2.8%)	44.2% (2.9%)		
Ethnicity (wave 2)	1080				
White		53.6% (4.0%)	59.9% (4.1%)	4.42	.15
Minority		46.4% (4.0%)	40.1% (4.1%)		
High school completion (wave 3)	280				
Dropped out		19.6% (3.7%)	20.8% (4.7%)	0.007	.83
Graduated		80.4% (3.7%)	79.2% (4.7%)		
High school completion (wave 4)	610				
Dropped out		18.9% (2.7%)	25.0% (4.1%)	2.83	.18
Graduated		81.1% (2.7%)	75.0% (4.1%)		
Functional academic skills	1010				

(wave 2)					
Low		53.6% (3.3%)	49.3% (3.4%)	1.84	.31
High		46.4% (3.3%)	50.7% (3.4%)		
Self-determination (wave 1)	590				
Low		45.8% (4.9%)	33.9% (4.9%)	8.16	.09
High		54.2% (4.9%)	66.1% (4.9%)		
Adaptive behaviors (wave 1)	1070				
Low		10.0% (2.0%)	7.9% (1.2%)	1.40	.33
High		90.0% (2.0%)	92.1% (1.2%)		
			Family Characteristics		
Household income (wave 2)	930				
$25,000 or less		47.2% (3.6%)	48.8% (2.8%)	13.26	.03
$25,001-$50,000		23.5% (3.1%)	31.2% (2.7%)		
More than $50,000		29.3% (2.8%)	20.0% (2.5%)		
Head of household education	1060				
High school or less		63.8% (3.1%)	72.2% (2.2%)	8.69	.02
Some college		36.2% (3.1%)	27.8% (2.2%)		
Parent employment (wave 2)	1040				
Not employed		38.1% (2.9%)	42.6% (2.6%)	2.16	.23
Employed		61.9% (2.9%)	57.4% (2.6%)		
Parent expectations: employment (wave 2)	610				
Definitely or probably will not		15.0% (2.6%)	15.7% (3.0%)	0.06	.86
Definitely or probably will		85.0% (2.6%)	84.3% (3.0%)		
Parent expectations: postsecondary education (wave 2)	300				
Definitely or probably will not		32.7% (4.5%)	43.1% (5.0%)	3.44	.12
Definitely or probably will		67.3% (4.5%)	56.9% (5.0%)		
			School characteristics		
Urbanicity (wave 1)	830				
Rural		15.0% (2.5%)	22.6% (4.0%)	8.18	.16
Suburban		53.5% (4.5%)	47.0% (4.6%)		
Urban		31.5% (4.2%)	30.3% (4.6%)		
			Outcomes		
Wave 3 Employment	290				
Yes		41.4% (5.1%)	24.1% (5.3%)	9.57	.03
No		58.6% (5.1%)	75.9% (5.3%)		
Wave 4 Employment	480				
Yes		44.7% (3.6%)	47.7% (7.4%)	0.37	.72
No		55.3% (3.6%)	52.3% (7.4%)		
Wave 3 Postsecondary	340				
Yes		18.1% (3.1%)	27.4% (6.6%)	4.14	.20
No		81.9% (3.1%)	72.6% (6.6%)		

Wave 4 Postsecondary	640				
Yes		24.9% (2.8%)	33.5% (5.8%)	5.07	.11
No		75.1% (2.8%)	66.5% (5.8%)		
Wave 3 Enjoys life	330				
A lot or all of the time		71.5% (4.8%)	84.2% (4.8%)	7.11	.08
Never or sometimes		28.5% (4.8%)	15.8% (4.8%)		
Wave 4 Enjoys life	270				
A lot or all of the time		75.2% (4.1%)	80.9% (6.5%)	1.00	.51
Never or sometimes		24.8% (4.1%)	19.1% (6.5%)		
Wave 3 Social	680				
At least once a week		57.4% (3.7%)	62.6% (4.7%)	1.86	.36
Less than once a week		42.6% (3.7%)	37.4% (4.7%)		
Wave 4 Social	580				
At least once a week		57.9% (3.7%)	51.5% (5.6%)	2.23	.30
Less than once a week		42.1% (3.7%)	48.5% (5.6%)		

Note. Percentages in each cell are population estimates. Percentages total 100% for each variable in each column.

[a]Actual sample sizes are rounded to the nearest ten.

Table 4

Comparison of Groups Combined for 2-Year Outcomes

Variables	n^a	Out of School By Wave 3	Out of School By Wave 4	χ^2	*p*
		Best Practices			
Youth involvement	340				
Yes		60.8% (8.9%)	55.9% (8.2%)	0.45	.69
No		39.2% (8.9%)	44.1% (8.2%)		
Family involvement	470				
Yes		68.4% (5.1%)	70.5% (4.0%)	0.26	.76
No		31.6% (5.1%)	29.5% (4.0%)		
Transition planning	360				
Yes		0%	4.8% (2.2%)	3.52	.13
No		100%	95.2% (2.2%)		
Work experiences	350				
Yes		50.1% (8.4%)	60.9% (6.9%)	2.27	.33
No		49.9% (8.4%)	39.1% (6.9%)		
Life skills instruction	380				
Yes		72.7% (6.9%)	71.9% (6.0%)	0.02	.93
No		27.3% (6.9%)	28.1% (6.0%)		
Inclusion in general education	130				
Yes		60.0% (13.4%)	44.7% (11.2%)	1.48	.38
No		40.0% (13.4%)	55.3% (11.2%)		
Interagency involvement	350				
Yes		45.5% (8.2%)	40.7% (7.5%)	0.44	.66
No		54.5% (8.2%)	59.3% (7.5%)		
		Youth Characteristics			
Gender	490				
Male		57.0% (5.2%)	55.5% (4.9%)	0.11	.85
Female		43.0% (5.2%)	44.5% (4.9%)		
Ethnicity	490				
White		52.0% (5.4%)	60.2% (5.4%)	3.32	.23
Minority		48.0% (5.4%)	39.8% (5.4%)		
High school completion	480				
Dropped out		21.0% (3.9%)	17.0% (3.3%)	1.21	.41
Graduated		79.0% (3.9%)	83.0% (3.3%)		
Functional academic skills	490				
Low		46.8% (4.8%)	54.3% (5.3%)	2.78	.29
High		53.2% (4.8%)	45.7% (5.3%)		
Self-determination	280				
Low		48.3% (6.5%)	42.5% (6.7%)	0.84	.54
High		51.7% (6.5%)	57.5% (6.7%)		
Adaptive behaviors	480				
Low		8.4% (3.1%)	9.7% (2.4%)	0.25	.74
High		91.6% (3.1%)	90.3% (2.4%)		

		Family Characteristics			
Household income	480				
$25,000 or less		47.1% (5.3%)	45.8% (5.4%)	9.21	.19
$25,001-$50,000		30.7% (4.7%)	21.1% (4.3%)		
More than $50,000		22.3% (4.3%)	33.1% (4.5%)		
Head of household education	480				
High school or less		71.3% (4.8%)	58.7% (4.8%)	8.28	.06
Some college		28.7% (4.8%)	41.3% (4.8%)		
Parent employment	490				
Not employed		47.3% (5.1%)	32.9% (5.1%)	10.45	.07
Employed		52.7% (5.1%)	67.1% (5.1%)		
Parent expectations: employment	480				
Definitely or probably will not		10.7% (2.7%)	13.4% (2.4%)	0.80	.47
Definitely or probably will		89.3% (2.7%)	86.6% (2.4%)		
Parent expectations: postsecondary education	480				
Definitely or probably will not		53.4% (5.2%)	61.3% (5.2%)	3.01	.30
Definitely or probably will		46.6% (5.2%)	38.7% (5.2%)		
		School characteristics			
Urbanicity	400				
Rural		16.8% (3.8%)	13.8% (3.4%)	0.69	.83
Suburban		52.3% (5.5%)	53.9% (5.7%)		
Urban		30.8% (4.9%)	32.2% (5.6%)		

Note. Percentages in each cell are population estimates. Percentages total 100% for each variable in each column.

[a]Actual sample sizes are rounded to the nearest ten.

Table 5.

Independent Variables: Constructs of Interest and Variables Measured in the NLTS2.

Construct of Interest	Variable Measured in NLTS2
Best Practices in Transition	
Youth involvement	Student's role in transition planning
Family involvement	If family involved in transition planning
Transition planning	If transition planning occurred
Work experiences	Percentage of school day spent in on- or off-campus work experience
Life skills instruction	If student receives life skills or social skills instruction
Inclusion in general education	Setting in which student took academic subjects
Interagency involvement	If adult service agency representative participated in transition planning
Youth Characteristics	
Gender	Gender
Ethnicity	Ethnicity
High school completion status	Youth graduated or dropped out
Functional academic skills	How well youth performs four functional academic skills
Self-determination	How well youth asks for what he/she needs in the classroom
Adaptive behaviors	How well youth dresses or feeds self
Family Characteristics	
Household income	Household income
Head of household education	Highest year of education completed by parent
Head of household employment	If parent is currently employed
Parent expectations: employment	Likelihood that youth will get a paid job
Parent expectations: postsecondary education	Likelihood that youth will attend postsecondary school
School Characteristics	
Urbanicity	School was urban/suburban/rural

Table 6

Population Percentage Estimates for Characteristics and Outcomes of Sample

Variables	n^a	Estimate	Standard error
		Youth Characteristics	
Gender	490		
Male		59.1%	2.9%
Female		40.9%	
Ethnicity	490		
White		53.6%	4.0%
Minority		46.4%	
High school completion	480		
Dropped out		18.9%	2.7%
Graduated		81.1%	
Functional academic skills	490		
Low		54.8%	3.1%
High		45.2%	
Self-determination	280		
Low		45.8%	4.7%
High		54.2%	
Adaptive behaviors	480		
Low		10.0%	2.0%
High		90.0%	
		Family Characteristics	
Household income	480		
$25,000 or less		47.8%	3.4%
$25,001-$50,000		24.3%	2.8%
More than $50,000		27.9%	2.5%
Head of household education	480		
High school or less		63.7%	3.0%
Some college		36.3%	
Parent employment	490		
Not employed		38.1%	2.9%
Employed		61.9%	
Parent expectations: employment	480		
Definitely or probably will not		14.6%	1.8%
Definitely or probably will		85.4%	
Parent expectations: postsecondary education	480		
Definitely or probably will not		61.9%	2.9%
Definitely or probably will		38.1%	
		School Characteristics	
Urbanicity	400		
Rural		15.3%	2.4%
Suburban		53.2%	4.4%

Urban		31.6%	4.3%
		Outcomes	
2-year employment	340		
Employed		41.8%	3.9%
Not employed		58.2%	
2-year postsecondary education	490		
Has enrolled		17.8%	2.3%
Never enrolled		82.2%	
2-year enjoys life	200		
A lot or all of the time		72.4%	4.5%
Never or rarely		27.6%	
2-year social interactions	370		
At least once a week		55.9%	3.6%
Less than once a week		44.1%	
4-year employment	160		
Employed		41.4%	5.0%
Not employed		58.6%	
4-year postsecondary education	190		
Has enrolled		34.5%	5.2%
Never enrolled		65.5%	
4-year enjoys life	90		
A lot or all of the time		74.2%	5.6%
Never or rarely		25.8%	
4-year social interactions	140		
At least once a week		71.5%	4.6%
Less than once a week		28.5%	

Note. Percentages in each cell are population estimates.
[a]Actual sample sizes are rounded to the nearest ten. Percentages in each cell are population estimates.

Table 7

Results of Descriptive Analyses for Percentage of Youth Receiving Each Best Practice Variable

Best practice variable	n^a	Population estimates		Standard error
		% received	% did not receive	
Youth involvement	340	57.7%	42.3%	6.2%
Family involvement	470	68.4%	31.6%	2.7%
Transition planning	360	96.9%	3.1%	1.4%
Work experiences	350	57.0%	43.0%	5.4%
Life skills instruction	380	72.2%	27.8%	4.6%
Inclusion in general education	130	48.1%	51.9%	9.6%
Interagency involvement	350	42.5%	57.5%	5.8%

[a]Actual sample sizes are rounded to the nearest ten.

Table 8

Results of Chi-Square Analyses for Best Practice Variable of Youth Involvement

Variables	n^a	Youth Involvement		χ^2	*p*	Relative risk[b]
		Yes	No			
Youth Characteristics						
Gender	340					
Male		32.8% (6.1%)	24.6% (4.5%)	0.04	.90	0.98
Female		25.0% (4.5%)	17.7% (5.0%)			
Ethnicity	340					
White		36.7% (5.4%)	33.5% (6.3%)	5.75	.12	0.74
Minority		21.1% (4.6%)	8.7% (2.8%)			
High school completion status	330					
Dropped out		7.8% (4.9%)	3.7% (1.9%)	1.00	.60	1.20
Graduated		50.3% (6.1%)	38.2% (6.2%)			
Functional academic skills	340					
Low		27.9% (5.8%)	29.6% (5.4%)	9.30	.09	0.69
High		29.9% (4.9%)	12.6% (4.4%)			
Self-determination						
Low	260	27.0% (4.6%)	19.0% (3.3%)	3.35	.27	0.84
High		37.9% (5.3%)	16.1% (4.7%)			
Adaptive behaviors	340					
Low		0.6% (0.5%)	11.9% (3.9%)	31.65	<.01 **	0.08
High		57.2% (6.2%)	30.3% (5.3%)			
Family Characteristics						
Household income	330					
$25,000 or less		25.7% (4.6%)	11.8% (3.1%)	6.60	.22	1.90[c]
$25,001-$50,000		13.7% (3.2%)	13.5% (4.6%)			-.60
More than$50,000		17.3% (4.2%)	18.0% (4.7%)			-.95
Head of household education	340					
High school or less		34.8% (5.7%)	19.8% (4.1%)	3.41	.26	1.26
Some college		23.0% (6.2%)	22.4% (5.0%)			
Parent employment	340					
Not employed		19.7% (3.9%)	8.0% (2.7%)	5.39	.13	1.35
Employed		38.1% (6.0%)	34.2% (6.2%)			
Parent expectations: employment	340					
Definitely or probably will not		2.1% (0.9%)	11.7% (3.7%)	22.97	<.01 **	0.23

Definitely or probably will		55.7% (6.1%)	30.6% (5.6%)			
Parent expectations: postsecondary education	330					
Definitely or probably will not		31.1% (5.4%)	29.5% (5.3%)	4.49	.22	0.77
Definitely or probably will		26.3% (4.9%)	13.1% (4.6%)			
School Characteristics						
Urbanicity	300					
Rural		10.9% (3.0%)	2.2% (1.0%)	11.75	.05	3.75[c]
Suburban		26.4% (4.8%)	29.2% (6.4%)			-2.13
Urban		20.0% (5.2%)	11.4% (3.5%)			0.81

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

[b]Relative risk of youth involvement given this level of characteristic variable (e.g., for gender, a male is .98 times as likely as a female to have experienced youth involvement).

[c]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.

**p*<.01. ***p*<.001.

Table 9

Results of Chi-Square Analyses for Best Practice Variable of Family Involvement

Variables	n^a	Family Involvement		χ^2	*p*	Relative risk[b]
		Yes	No			
Youth Characteristics						
Gender	470					
Male		42.0% (3.0%)	18.2% (2.4%)	0.68	.55	1.06
Female		26.4% (2.6%)	13.5% (2.1%)			
Ethnicity	470					
White		39.8% (3.4%)	13.8% (2.4%)	8.81	.04	1.21
Minority		28.5% (3.2%)	17.9% (2.6%)			
High school completion status	460					
Dropped out		10.2% (2.1%)	8.1% (1.8%)	8.08	.05	0.78
Graduated		58.6% (3.4%)	23.0% (2.8%)			
Functional academic skills	470					
Low		37.9% (3.1%)	17.7% (2.2%)	0.01	.95	0.99
High		30.4% (3.0%)	13.9% (2.2%)			
Self-determination	270					
Low		35.4%(14.4%)	11.3% (3.0%)	0.20	.78	1.03
High		39.1% (4.8%)	14.2% (3.3%)			
Adaptive behaviors	470					
Low		7.1% (1.7%)	3.3% (1.2%)	<.01	.97	1.01
High		61.0% (2.9%)	28.6% (2.7%)			
Family Characteristics						
Household income	460					
$25,000 or less		29.0% (3.0%)	18.2% (2.4%)	10.86	.08	-2.51[c]
$25,001-$50,000		17.7% (2.4%)	6.9% (1.8%)			0.58
More than$50,000		22.0% (2.4%)	6.2% (1.7%)			1.90
Head of household education	460					
High school or less		44.7% (2.8%)	19.3% (2.5%)	0.72	.57	1.06
Some college		23.8% (2.6%)	12.2% (2.4%)			
Parent employment	470					
Not employed		23.4% (2.4%)	14.1% (2.2%)	5.17	.08	0.86
Employed		45.4% (2.9%)	17.2% (2.2%)			
Parent expectations: employment	460					
Definitely or probably will not		7.8% (1.6%)	6.2% (1.6%)	5.67	.14	0.79
Definitely or		60.6% (2.9%)	25.4% (2.7%)			

probably will						
Parent expectations: postsecondary education	460					
Definitely or probably will not		40.3% (3.0%)	22.1% (2.5%)	4.27	.15	0.88
Definitely or probably will		27.7% (2.9%)	9.8% (1.9%)			
School Characteristics						
Urbanicity	380					
Rural		3.0% (1.0%)	11.3% (1.9%)	2.85	.40	1.14[c]
Suburban		14.4% (2.8%)	39.9% (3.8%)			0.40
Urban		10.2% (2.3%)	21.2% (3.4%)			-1.11

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

[b]Relative risk of family involvement given this level of characteristic variable (e.g., for gender, a male is 1.06 times as likely as a female to have experienced family involvement). [c]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.

Table 10

Results of Chi-Square Analyses for Best Practice Variable of Transition Planning

Variables	n^a	Transition Planning: Yes	Transition Planning: No	χ^2	*p*	Relative risk[b]
Youth Characteristics						
Gender	360					
Male		56.7% (5.5%)	2.3% (1.1%)	0.61	.52	0.98
Female		40.2% (5.4%)	0.8% (0.8%)			
Ethnicity	360					
White		67.9% (5.0%)	1.9% (1.1%)	0.16	.72	1.01
Minority		29.0% (4.9%)	1.2% (0.9%)			
High school completion status	350					
Dropped out		10.7% (5.0%)	0% (0%)	0.75[c]	.55	1.04
Graduated		86.1% (5.1%)	3.1% (1.4%)			
Functional academic skills	360					
Low		56.4% (5.5%)	2.8% (1.4%)	2.44	.07	0.96
High		40.5% (5.4%)	.3% (.3%)			
Self-determination	270					
Low		47.7% (5.1%)	0.8% (0.8%)	1.74	.31	1.03
High		49.1% (5.2%)	2.4% (1.2%)			
Adaptive behaviors	360					
Low		12.3% (3.9%)	0.5% (0.5%)	0.07[c]	.81	0.99
High		84.6% (4.0%)	2.6% (1.4%)			
Family Characteristics						
Household income	350					
$25,000 or less		36.1% (4.8%)	1.5% (.9%)	2.35[c]	.14	-1.56[d]
$25,001-$50,000		26.4% (5.2%)	0% (0%)			9.13
More than$50,000		35.2% (5.2%)	.5% (.5%)			0.52
Head of household education	350					
High school or less		52.4% (6.0%)	1.1% (.8%)	0.80	.45	1.02
Some college		44.5% (6.1%)	2.0% (1.2%)			
Parent employment	360					
Not employed		27.1% (4.6%)	1.3% (1.1%)	0.70	.53	0.98
Employed		69.8% (4.8%)	1.8% (4.0%)			
Parent expectations: employment	350					
Definitely or probably will not		13.4% (3.6%)	0.5% (0.5%)	0.04[c]	.86	0.99
Definitely or		83.4% (3.8%)	2.6% (1.4%)			

probably will						
Parent expectations: postsecondary education	350					
Definitely or probably will not		58.9% (5.5%)	2.8% (1.4%)	2.05	.09	0.96
Definitely or probably will		37.9% (5.4%)	0.3% (0.3%)			
School Characteristics						
Urbanicity	320					
Rural		12.2% (2.8%)	1.5% (1.0%)	5.37[c]	.12	-1.06[d]
Suburban		53.9% (6.1%)	1.4% (1.2%)			0.35
Urban		30.7% (5.7%)	0.4% (0.3%)			2.00

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

[b]Relative risk of having received transition planning given this level of characteristic variable (e.g., for gender, a male is .98 times as likely as a female to have experienced transition planning).

[c] For these five variables, at least one cell had an expected frequency of less than 5, therefore chi-square results are not reliable.

[d]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.

Table 11

Results of Chi-Square Analyses for Best Practice Variable of Work Experiences

Variables	n^a	Work Experience: Yes	Work Experience: No	χ^2	*p*	Relative risk[b]
Youth Characteristics						
Gender	350					
Male		33.5% (5.5%)	24.9% (4.2%)	0.01	.94	1.01
Female		23.5% (4.5%)	18.1% (4.0%)			
Ethnicity	350					
White		40.4% (4.6%)	29.4% (4.5%)	.14	.82	1.05
Minority		16.6% (5.1%)	13.6% (3.3%)			
High school completion status	350					
Dropped out		8.6% (4.7%)	3.0% (1.8%)	3.32	.31	1.36
Graduated		48.1% (5.1%)	40.2% (5.4%)			
Functional academic skills	350					
Low		41.3% (5.9%)	17.5% (4.0%)	21.16	<.01*	1.84
High		15.7% (3.1%)	25.5% (4.2%)			
Self-determination	270					
Low		28.4% (3.9%)	17.8% (4.3%)	1.43	.44	1.14
High		28.9% (3.9%)	24.9% (4.3%)			
Adaptive behaviors	350					
Low		5.7% (2.3%)	7.0% (3.1%)	1.85	.40	0.76
High		51.3% (5.8%)	36.0% (5.2%)			
Family Characteristics						
Household income	350					
$25,000 or less		18.9% (5.1%)	18.7% (3.7%)	11.59	.07	-0.70[c]
$25,001-$50,000		11.3% (2.8%)	15.5% (4.1%)			-1.75
More than$50,000		25.3% (5.0%)	10.4% (3.0%)			2.28
Head of household education	350					
High school or less		23.3% (4.5%)	30.5% (5.3%)	18.23	<.01*	0.59
Some college		33.8% (5.9%)	12.6% (3.3%)			
Parent employment	350					
Not employed		12.5% (3.0%)	15.6% (3.8%)	5.18	.11	0.71
Employed		44.5% (5.6%)	27.4% (4.6%)			
Parent expectations: employment	350					
Definitely or probably will not		5.3% (1.6%)	8.5% (3.3%)	4.66	.13	0.64
Definitely or		51.7% (5.7%)	34.5% (5.2%)			

probably will						
Parent expectations: postsecondary education	350					
Definitely or probably will not		41.7% (5.9%)	19.6% (4.3%)	17.00	<.01*	1.77
Definitely or probably will		14.9% (3.5%)	23.9% (4.2%)			
School Characteristics						
Urbanicity	320					
Rural		6.6% (2.5%)	7.0% (1.9%)	1.65	.70	-0.72[c]
Suburban		31.5% (4.7%)	24.6% (5.4%)			-0.23
Urban		19.2% (5.4%)	11.2% (3.5%)			0.67

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.
[a]Actual sample size included in each chi-square analysis rounded to the nearest ten. [b]Relative risk of having work experiences given this level of characteristic variable (e.g., for gender, a male is 1.01 times as likely as a female to have work experiences). [c]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.
*p<.01. **p<.001.

Table 12

Results of Chi-Square Analyses for Best Practice Variable of Life Skills Instruction

Variables	n^a	Life Skills Instruction: Yes	Life Skills Instruction: No	χ^2	*p*	Relative risk[b]
Youth Characteristics						
Gender	380					
Male		41.1% (5.3%)	17.1% (3.5%)	0.39	.68	0.95
Female		31.1% (5.6%)	10.7% (3.2%)			
Ethnicity	380					
White		51.4% (5.6%)	18.5% (4.0%)	0.43	.70	1.06
Minority		20.8% (5.1%)	9.3% (2.7%)			
High school completion status	370					
Dropped out		9.4% (4.6%)	2.1% (1.7%)	1.19	.55	1.15
Graduated		62.6% (6.0%)	25.8% (4.5%)			
Functional academic skills	380					
Low		47.1% (5.4%)	11.5% (3.3%)	9.80	.05	1.33
High		25.1% (5.0%)	16.3% (3.6%)			
Self-determination	280					
Low		34.1% (4.2%)	12.1% (3.3%)	2.96	.31	1.16
High		34.3% (4.9%)	19.5% (5.1%)			
Adaptive behaviors	370					
Low		9.3% (3.3%)	3.3% (2.0%)	0.04	.91	1.02
High		62.9% (5.0%)	24.5% (4.4%)			
Family Characteristics						
Household income	370					
$25,000 or less		24.9% (5.0%)	12.8% (3.5%)	5.10	.34	-0.75[c]
$25,001-$50,000		17.5% (4.5%)	9.2% (2.8%)			-0.72
More than$50,000		28.8% (4.9%)	6.8% (2.6%)			1.55
Head of household education	370					
High school or less		33.5% (5.0%)	20.2% (4.2%)	11.46	.011	0.75
Some college		38.6% (5.9%)	7.6% (2.5%)			
Parent employment	380					
Not employed		19.6% (4.3%)	8.7% (3.0%)	0.39	.71	0.94
Employed		52.6% (5.7%)	19.1% (3.8%)			
Parent expectations: employment	370					
Definitely or probably will not		10.2% (3.1%)	3.6% (2.0%)	0.06	.87	1.03
Definitely or		62.0% (4.8%)	24.2% (4.3%)			

probably will						
Parent expectations: postsecondary education	370					
Definitely or probably will not		47.1% (5.7%)	14.3% (3.4%)	2.40	.33	1.15
Definitely or probably will		25.8% (5.0%)	12.8% (3.5%)			
		School Characteristics				
Urbanicity	340					
Rural		9.6% (3.0%)	4.3% (1.8%)	0.78	.83	-0.24
Suburban		39.1% (5.8%)	16.8% (4.0%)			-0.41
Urban		23.0% (5.4%)	7.3% (2.5%)			0.62

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten. [b]Relative risk of receiving life skills instruction given this level of characteristic variable (e.g., for gender, a male is .95 times as likely as a female to have received life skills instruction). [c]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.

Table 13

Results of Chi-Square Analyses for Best Practice Variable of Inclusion in General Education

Variables	n^a	General Education: Yes	General Education: No	χ^2	*p*	Relative risk[b]
Youth Characteristics						
Gender	130					
Male		27.3% (7.0%)	41.8% (9.5%)	6.06	.07	0.59
Female		20.9% (7.2%)	10.1% (4.1%)			
Ethnicity	130					
White		31.2% (7.4%)	34.7% (7.7%)	0.04	.93	0.96
Minority		16.9% (6.9%)	17.2% (10.2%)			
High school completion status	130					
Dropped out		3.2% (1.9%)	13.6% (10.2%)	6.50	.09	0.35
Graduated		45.7% (9.6%)	37.5% (7.8%)			
Functional academic skills	130					
Low		19.1% (5.7%)	32.8% (9.9%)	5.00	.12	0.61
High		29.0% (8.6%)	19.1% (5.3%)			
Self-determination	90					
Low		8.7% (3.5%)	25.6% (3.2%)	6.91	.033	0.44
High		37.7% (8.4%)	27.9% (8.3%)			
Adaptive behaviors	130					
Low		0.8% (0.8%)	7.3% (3.3%)	4.57	.018	0.20
High		47.3% (9.6%)	44.6% (9.4%)			
Family Characteristics						
Household income	130					
$25,000 or less		27.4% (8.5%)	21.5% (10.0%)	3.73	.53	0.87[c]
$25,001-$50,000		9.4% (4.1%)	11.7% (6.1%)			-0.12
More than$50,000		9.8% (4.9%)	20.2% (5.8%)			-1.10
Head of household education	130					
High school or less		29.1% (8.3%)	18.5% (4.9%)	5.53	.11	1.68
Some college		19.0% (6.6%)	33.3% (10.0%)			
Parent employment	130					
Not employed		25.7% (8.1%)	7.2% (2.7%)	16.06	<.01*	2.34
Employed		22.5% (5.9%)	44.7% (9.9%)			
Parent expectations: employment	130					
Definitely or		0.3% (0.0%)	7.4% (3.3%)	5.95	<.01*	0.07

probably will not						
Definitely or probably will		47.8% (9.6%)	44.4% (9.5%)			
Parent expectations: postsecondary education	130					
Definitely or probably will not		25.3% (7.6%)	40.3% (9.5%)	6.18	.101	0.58
Definitely or probably will		22.8% (8.0%)	11.6% (4.4%)			
School Characteristics						
Urbanicity	120					
Rural		14.0% (4.5%)	4.6% (2.2%)	8.33	.22	2.71
Suburban		24.7% (7.9%)	25.3% (7.0%)			0.13
Urban		9.5% (6.1%)	21.9% (10.5%)			-1.13

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten. [b]Relative risk of experiencing general education inclusion given this level of characteristic variable (e.g., for gender, a male is .59 times as likely as a female to have experienced general education inclusion). [c]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.

*p<.01. **p<.001.

Table 14

Results of Chi-Square Analyses for Best Practice Variable of Interagency Involvement

Variables	n^a	Interagency Involvement: Yes	Interagency Involvement: No	χ^2	*p*	Relative risk[b]
Youth Characteristics						
Gender	350					
Male		20.2% (3.8%)	37.4% (6.1%)	6.01	.15	0.67
Female		22.3% (5.4%)	20.1% (4.1%)			
Ethnicity	350					
White		30.8% (5.3%)	39.2% (5.9%)	0.43	.69	1.13
Minority		11.7% (3.4%)	18.3% (4.5%)			
High school completion status	340					
Dropped out		1.2% (0.7%)	10.2% (5.1%)	10.59	<.01*	0.23
Graduated		41.5% (5.8%)	47.1% (5.5%)			
Functional academic skills	350					
Low		23.4% (5.0%)	33.9% (5.8%)	0.32	.72	0.91
High		19.1% (4.0%)	23.6% (4.6%)			
Self-determination	260					
Low		24.1% (3.8%)	22.1% (4.0%)	13.86	.015	1.83
High		15.3% (3.5%)	38.5% (5.3%)			
Adaptive behaviors	350					
Low		3.7% (2.6%)	8.8% (3.1%)	1.96	.43	0.66
High		38.8% (5.6%)	48.7% (5.9%)			
Family Characteristics						
Household income	340					
$25,000 or less		10.7% (3.1%)	26.6% (5.0%)	9.06	.151	-2.31[c]
$25,001-$50,000		14.8% (3.8%)	12.2% (4.0%)			1.71
More than$50,000		16.0% (4.3%)	19.6% (4.4%)			0.54
Head of household education	340					
High school or less		20.5% (4.1%)	34.3% (5.1%)	2.53	.33	0.77
Some college		22.0% (5.1%)	23.2% (6.0%)			
Parent employment	350					
Not employed		10.8% (3.3%)	17.2% (4.1%)	0.48	.68	0.88
Employed		31.7% (5.3%)	40.3% (6.1%)			
Parent expectations: employment	340					
Definitely or probably will not		5.0% (2.6%)	8.6% (2.8%)	0.40	.69	0.85
Definitely or		37.5% (5.5%)	48.9% (5.9%)			

probably will						
Parent expectations: postsecondary education	340					
Definitely or probably will not		29.1% (5.4%)	31.2% (5.4%)	4.93	.17	1.50
Definitely or probably will		12.7% (3.4%)	26.9% (5.2%)			
School Characteristics						
Urbanicity	310					
Rural		6.8% (1.9%)	6.3% (2.6%)	2.17	.60	0.73[c]
Suburban		24.7% (5.4%)	31.0% (5.0%)			0.41
Urban		11.1% (3.2%)	20.1% (5.5%)			-1.10

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

[b]Relative risk of interagency involvement given this level of characteristic variable (e.g., for gender, a male is .67 times as likely as a female to have experienced interagency involvement).

[c]For variables with 3 levels, standardized residuals are provided. Residuals greater than ±2 have contributed to a significant χ^2 result.

**p*<.01. ***p*<.001.

Table 15

Results of Analyses of Missing Data for Best Practice Variable of Youth Involvement

Variables	n^a	Youth Involvement		χ^2	*p*
		Have	Missing		
Youth Characteristics					
Gender	490				
Male		54.9% (5.3%)	3.3% (1.3%)	1.45	.30
Female		40.9% (5.3%)	0.9% (0.8%)		
Ethnicity	490				
White		67.3% (4.9%)	2.6% (1.1%)	0.24	.65
Minority		28.5% (4.8%)	1.6% (1.0%)		
High school completion status	480				
Dropped out		11.0% (4.9%)	0.6% (0.5%)	0.05	.82
Graduated		84.8% (5.0%)	3.7% (1.4%)		
Functional academic skills	490				
Low		55.1% (5.2%)	3.5% (1.4%)	2.10	.14
High		40.7% (5.1%)	.8% (0.6%)		
Self-determination	280				
Low		42.4% (4.7%)	3.5% (1.7%)	0.04	.90
High		49.7% (4.8%)	4.4% (1.7%)		
Adaptive behaviors	480				
Low		12.0% (3.8%)	0.6% (0.5%)	0.06	.81
High		83.8% (4.0%)	3.6% (1.5%)		
Family Characteristics					
Household income	480				
$25,000 or less		36.3% (4.7%)	1.4% (0.9%)	0.74	.58
$25,001-$50,000		26.3% (5.1%)	.4% (0.2%)		
More than $50,000		34.2% (5.1%)	1.4% (0.8%)		
Head of household education	480				
High school or less		52.3% (6.0%)	1.5% (0.9%)	1.14	.34
Some college		43.5% (6.1%)	2.7% (1.2%)		
Parent employment	490				
Not employed		26.6% (4.3%)	1.8% (1.2%)	0.79	.47
Employed		69.2% (4.6%)	2.5% (1.1%)		
Parent expectations: employment	480				
Definitely or probably will not		13.1% (3.5%)	0.6% (0.5%)	0.02	.89
Definitely or probably will		82.6% (3.7%)	3.6% (1.5%)		
Parent expectations:	480				

postsecondary education					
Definitely or probably will not		58.0% (5.3%)	3.3% (1.4%)	1.06	.29
Definitely or probably will		37.7% (5.2%)	0.9% (0.6%)		
		School Characteristics			
Urbanicity	400				
Rural		12.4% (2.9%)	1.4% (0.9%)	3.76	.18
Suburban		53.2% (6.0%)	2.6% (1.3%)		
Urban		30.0% (5.5%)	0.3% (0.3%)		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

Table 16

Results of Analyses of Missing Data for Best Practice Variable of Family Involvement

Variables	n^a	Family Involvement		χ^2	*p*
		Have	Missing		
Youth Characteristics					
Gender	490				
Male		57.4% (3.0%)	1.7% (.8%)	4.81	.12
Female		38.0% (2.9%)	2.9% (.9%)		
Ethnicity	490				
White		51.1% (3.8%)	2.5% (1.0%)	<.01	.96
Minority		44.3% (3.9%)	2.2% (0.8%)		
High school completion status	480				
Dropped out		17.6% (2.6%)	1.3% (0.7%)	2.47	.22
Graduated		78.5% (2.8%)	2.6% (0.8%)		
Functional academic skills	490				
Low		53.1% (3.2%)	1.7% (0.7%)	3.03	.16
High		42.3% (3.2%)	2.9% (1.0%)		
Self-determination	280				
Low		45.3% (4.8%)	0.5% (0.4%)	2.64	.14
High		51.8% (4.9%)	2.4% (1.4%)		
Adaptive behaviors	480				
Low		9.9% (2.2%)	0.9% (0.6%)	1.70	.38
High		85.6% (2.3%)	3.7% (1.0%)		
Family Characteristics					
Household income	480				
$25,000 or less		45.0% (3.5%)	2.9% (1.0%)	1.71	.55
$25,001-$50,000		23.4% (2.8%)	0.9% (0.4%)		
More than $50,000		26.9% (2.5%)	1.0% (0.6%)		
Head of household education	480				
High school or less		61.1% (3.1%)	2.6% (0.9%)	0.48	.60
Some college		34.4% (3.0%)	2.0% (0.8%)		
Parent employment	490				
Not employed		35.7% (2.9%)	2.4% (0.8%)	1.92	.28
Employed		59.6% (3.0%)	2.2% (0.9%)		
Parent expectations: employment	480				
Definitely or probably will not		13.4% (1.8%)	1.2% (0.7%)	2.61	.22
Definitely or probably		82.1% (2.1%)	3.4% (1.0%)		

will					
Parent expectations: postsecondary education	480				
Definitely or probably will not		59.6% (3.0%)	2.3% (0.8%)	1.40	.36
Definitely or probably will		35.8% (3.0%)	2.3% (0.9%)		
School Characteristics					
Urbanicity	400				
Rural		13.9% (2.1%)	1.4% (0.8%)	12.91	<.01*
Suburban		52.8% (4.4%)	.3% (0.3%)		
Urban		30.6% (4.2%)	1.0% (0.4%)		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

*p<.01. **p<.001.

Table 17

Results of Analyses of Missing Data for Best Practice Variable of Transition Planning

Variables	n^a	Transition Planning		χ^2	*p*
		Have	Missing		
		Youth Characteristics			
Gender	490				
Male		57.6% (5.3%)	0.6% (0.5%)	2.29	.09
Female		40.0% (5.4%)	1.8% (0.9%)		
Ethnicity	490				
White		68.1% (5.0%)	1.8% (0.9%)	0.03	.87
Minority		29.4% (4.8%)	0.6% (0.6%)		
High school completion status	480				
Dropped out		10.5% (4.8%)	1.1% (0.7%)	5.83	.02
Graduated		87.1% (4.9%)	1.3% (0.7%)		
Functional academic skills	490				
Low		57.5% (5.1%)	0.8% (0.5%)	1.32	.21
High		39.9% (5.4%)	1.6% (0.9%)		
Self-determination	280				
Low		43.9% (4.7%)	2.0% (1.4%)	6.96	.17
High		46.6% (5.6%)	7.6% (4.4%)		
Adaptive behaviors	480				
Low		12.5% (3.8%)	0.2% (0.2%)	0.13	.56
High		85.1% (4.0%)	2.3% (1.0%)		
		Family Characteristics			
Household income	480				
$25,000 or less		36.6% (4.8%)	1.1% (0.8%)	0.73	.70
$25,001-$50,000		25.8% (5.0%)	1.0% (0.7%)		
More than $50,000		35.1% (5.1%)	0.5% (0.4%)		
Head of household education	480				
High school or less		52.2% (5.9%)	1.6% (.9%)	0.34	.49
Some college		45.4% (6.0%)	.8% (.5%)		
Parent employment	490				
Not employed		27.7% (4.6%)	0.6% (0.5%)	0.07	.80
Employed		69.8% (4.6%)	1.9% (0.8%)		
Parent expectations: employment	480				
Definitely or probably will not		13.6% (3.6%)	0.2% (0.2%)	0.23	.44
Definitely or probably will		83.9% (3.8%)	2.3% (1.0%)		
Parent expectations:	480				

postsecondary education					
Definitely or probably will not		60.2% (5.1%)	1.1% (0.7%)	0.52	.51
Definitely or probably will		37.3% (5.4%)	1.3% (0.8%)		
		School Characteristics			
Urbanicity	400				
Rural		13.3% (2.9%)	0.5% (0.6%)	1.96	.16
Suburban		53.9% (6.1%)	1.9% (0.9%)		
Urban		30.3% (5.5%)	0.1% (0.0%)		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

Table 18

Results of Analyses of Missing Data for Best Practice Variable of Work Experiences

Variables	n^a	Work Experience		χ^2	*p*
		Have	Missing		
		Youth Characteristics			
Gender	490				
Male		58.2% (5.3%)	0%	0.88	.24
Female		41.5% (5.3%)	0.3% (0.3%)		
Ethnicity	490				
White		69.6% (4.9%)	0.3% (0.3%)	0.27	.52
Minority		30.1% (4.9%)	0%		
High school completion status	480				
Dropped out		11.6% (4.9%)	0%	0.08	.74
Graduated		88.1% (4.9%)	0.3% (0.3%)		
Functional academic skills	490				
Low		58.5% (5.1%)	0%	0.89	.24
High		41.2% (5.1%)	0.3% (0.3%)		
Self-determination	280				
Low		43.0% (4.7%)	2.8% (1.2%)	0.24	.68
High		50.0% (4.9%)	4.1% (1.7%)		
Adaptive behaviors	480				
Low		12.6% (3.8%)	0%	0.09	.72
High		87.1% (3.8%)	0.3% (0.3%)		
		Family Characteristics			
Household income	480				
$25,000 or less		37.4% (4.7%)	0.3% (0.3%)	1.05	.66
$25,001-$50,000		26.7% (5.1%)	0%		
More than $50,000		35.6% (5.1%)	0%		
Head of household education	480				
High school or less		53.5% (6.0%)	0.3% (0.3%)	0.54	.37
Some college		46.4% (6.0%)	0%		
Parent employment	490				
Not employed		28.0% (4.5%)	0.3% (0.3%)	1.60	.12
Employed		71.7% (4.5%)	0%		
Parent expectations: employment	480				
Definitely or probably will not		13.8% (3.6%)	0%	0.10	.70
Definitely or probably will		85.9% (3.6%)	0.3% (0.3%)		
Parent expectations:	480				

postsecondary education					
Definitely or probably will not		61.0% (5.2%)	0.3% (0.3%)	0.39	.43
Definitely or probably will		38.6% (5.2%)	0%		
		School Characteristics			
Urbanicity	400				
Rural		13.5% (3.0%)	0.3% (0.3%)	3.87	.33
Suburban		55.8% (5.9%)	0%		
Urban		30.3% (5.5%)	0%		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

Table 19

Results of Analyses of Missing Data for Best Practice Variable of Life Skills Instruction

Variables	n^a	Life Skills Instruction		χ^2	*p*
		Have	Missing		
		Youth Characteristics			
Gender	490				
Male		49.0% (3.9%)	10.5% (3.2%)	1.33	.38
Female		35.1% (3.3%)	5.4% (1.5%)		
Ethnicity	490				
White		53.2% (4.4%)	5.0% (1.4%)	23.03	<.01*
Minority		30.8% (4.1%)	11.0% (3.0%)		
High school completion status	480				
Dropped out		14.0% (2.4%)	2.9% (1.1%)	0.08	.77
Graduated		70.0% (3.9%)	13.1% (3.1%)		
Functional academic skills	490				
Low		46.3% (3.6%)	9.3% (3.2%)	0.20	.73
High		37.7% (3.5%)	6.7% (1.3%)		
Self-determination	280				
Low		-[b]	-	1.87	.31
High		-	-		
Adaptive behaviors	480				
Low		7.7% (2.0%)	1.4% (.7%)	0.02	.92
High		76.3% (4.1%)	14.6% (3.7%)		
		Family Characteristics			
Household income	480				
$25,000 or less		37.1% (3.7%)	6.5% (2.6%)	5.06	.22
$25,001-$50,000		19.4% (3.0%)	5.8% (1.3%)		
More than $50,000		27.2% (3.0%)	3.8% (1.2%)		
Head of household education	480				
High school or less		53.3% (3.6%)	10.9% (3.0%)	0.59	.49
Some college		30.8% (3.7%)	5.0% (1.4%)		
Parent employment	490				
Not employed		31.2% (3.1%)	6.5% (2.5%)	0.33	.66
Employed		52.9% (3.7%)	9.4% (2.0%)		
Parent expectations: employment	480				
Definitely or probably will not		11.5% (2.0%)	5.3% (2.1%)	14.90	<.01*
Definitely or probably will		72.6% (3.8%)	10.6% (2.2%)		
Parent expectations:	480				

postsecondary education					
Definitely or probably will not		50.8% (3.5%)	11.1% (2.9%)	2.08	.12
Definitely or probably will		33.3% (3.4%)	4.7% (1.2%)		
		School Characteristics			
Urbanicity	400				
Rural		14.7% (2.4%)	.6% (0.2%)	10.58	.11
Suburban		45.5% (4.3%)	7.7% (1.7%)		
Urban		24.7% (3.8%)	6.9% (3.1%)		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.
[a]Actual sample size included in each chi-square analysis rounded to the nearest ten. [b] Unable to report estimates as crosstabulation has less than 3 cases in a cell.
*p<.01. **p<.001.

Table 20

Results of Analyses of Missing Data for Best Practice Variable of General Education Inclusion

Variables	n^a	General Education		χ^2	*p*
		Have	Missing		
Youth Characteristics					
Gender	490				
Male		27.9% (5.2%)	30.4% (4.6%)	6.80	.13
Female		12.5% (3.3%)	29.3% (5.5%)		
Ethnicity	490				
White		26.6% (4.5%)	43.4% (5.2%)	1.11	.51
Minority		13.8% (4.3%)	16.3% (3.6%)		
High school completion status	480				
Dropped out		6.7% (4.4%)	4.9% (2.4%)	3.64	.36
Graduated		33.3% (5.0%)	55.2% (5.8%)		
Functional academic skills	490				
Low		20.9% (5.2%)	37.6% (5.5%)	2.53	.35
High		19.4% (3.8%)	22.1% (4.1%)		
Self-determination	280				
Low		10.0% (1.5%)	35.8% (4.6%)	5.60	.05
High		19.1% (3.0%)	35.0% (5.1%)		
Adaptive behaviors	480				
Low		3.3% (1.5%)	9.4% (3.6%)	2.58	.21
High		37.1% (5.0%)	50.3% (5.3%)		
Family Characteristics					
Household income	480				
$25,000 or less		19.9% (4.5%)	17.8% (3.8%)	7.44	.24
$25,001-$50,000		8.6% (3.2%)	18.2% (4.4%)		
More than $50,000		12.2% (3.1%)	23.4% (5.3%)		
Head of household education	480				
High school or less		19.2% (3.9%)	34.6% (4.9%)	2.09	.36
Some college		21.1% (5.2%)	25.1% (5.0%)		
Parent employment	490				
Not employed		13.2% (3.5%)	15.1% (3.8%)	1.41	.49
Employed		27.1% (5.5%)	44.6% (5.3%)		
Parent expectations: employment	480				
Definitely or probably will not		3.1% (1.4%)	10.7% (3.3%)	4.29	.08
Definitely or probably		37.2% (5.0%)	49.0% (5.3%)		

will					
Parent expectations: postsecondary education	480				
Definitely or probably will not		26.7% (5.2%)	34.6% (5.4%)	1.04	.54
Definitely or probably will		14.0% (3.6%)	24.6% (4.7%)		
School Characteristics					
Urbanicity	400				
Rural		7.8% (2.2%)	6.1% (2.6%)	3.21	.55
Suburban		20.9% (4.2%)	34.9% (5.4%)		
Urban		13.2% (5.0%)	17.1% (4.1%)		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

Table 21

Results of Analyses of Missing Data for Best Practice Variable of Interagency Involvement

Variables	n^a	Interagency Involvement		χ^2	*p*
		Have	Missing		
		Youth Characteristics			
Gender	490				
Male		55.5% (5.4%)	2.7% (1.2%)	0.83	.43
Female		40.9% (5.3%)	.9% (0.8%)		
Ethnicity	490				
White		67.4% (4.9%)	2.5% (1.1%)	0.01	.95
Minority		28.9% (4.8%)	1.1% (0.8%)		
High school completion status	480				
Dropped out		11.0% (4.9%)	0.6% (0.5%)	0.15	.70
Graduated		85.3% (5.0%)	3.1% (1.3%)		
Functional academic skills	490				
Low		55.2% (5.2%)	3.3% (1.4%)	3.49	.03
High		41.2% (5.1%)	0.3% (0.3%)		
Self-determination	280				
Low		42.7% (4.6%)	3.1% (1.7%)	0.17	.79
High		49.8% (4.8%)	4.4% (1.7%)		
Adaptive behaviors	480				
Low		12.0% (3.8%)	0.6% (0.5%)	0.19	.68
High		84.4% (3.9%)	3.0% (1.4%)		
		Family Characteristics			
Household income	480				
$25,000 or less		36.4% (4.7%)	1.3% (0.9%)	0.51	.68
$25,001-$50,000		26.3% (5.1%)	0.4% (0.2%)		
More than $50,000		34.7% (5.1%)	0.9% (0.6%)		
Head of household education	480				
High school or less		52.8% (6.0%)	0.9% (0.8%)	2.41	.19
Some college		43.5% (6.1%)	2.7% (1.2%)		
Parent employment	490				
Not employed		27.0% (4.4%)	1.3% (1.1%)	0.22	.73
Employed		69.4% (4.6%)	2.3% (1.1%)		
Parent expectations: employment	480				
Definitely or probably will not		13.1% (3.5%)	0.6% (0.5%)	0.11	.75
Definitely or probably		83.2% (3.7%)	3.0% (1.4%)		

will					
Parent expectations: postsecondary education	480				
Definitely or probably will not		58.2% (5.3%)	3.2% (1.4%)	2.11	.09
Definitely or probably will		38.2% (5.2%)	0.5% (0.4%)		
School Characteristics					
Urbanicity	400				
Rural		12.6% (2.9%)	1.3% (0.9%)	3.41	.23
Suburban		53.7% (5.9%)	2.2% (1.2%)		
Urban		30.0% (5.5%)	0.3% (0.3%)		

Note. Percentages in each cell are population estimates. Standard errors for each population estimate are in parentheses.

[a]Actual sample size included in each chi-square analysis rounded to the nearest ten.

Table 22

Characteristics with Significant Association with Best Practices in Analyses for Research Question 2

Best practice variable	Characteristics associated with receiving (p<.01)
Youth involvement	High adaptive behavior
	Parent expects youth will be employed
Family involvement	None
Transition planning	None
Work experiences	Low functional academic skills
	Parent has at least some college education
	Parent does not expect youth will attend postsecondary education
Life skills instruction	None
Inclusion in general education	Parent not employed[a]
	Parent expects youth will be employed[a]
Interagency involvement	Completed high school

[a]These results should be interpreted with caution due to high degree of missing data.

Table 23

Associations Between Independent Variables and 2-Year Outcome Variables

Variables	Employment		Postsecondary Education		Enjoys Life		Social Interactions	
	χ^2	*p*	χ^2	*p*	χ^2	*p*	χ^2	*p*
Characteristic variables								
Gender	4.91*	.15	0.84	.52	1.63	.37	1.88	.41
Ethnicity	6.79*	.07	0.62	.58	1.54	.35	2.87*	.21
High school completion	9.39*	.02	.10	.82	0.43	.57	0.10	.83
Functional academics	20.83*	.01	8.62*	.02	3.57*	.18	11.89*	.01
Self-determination	11.97*	.01	0.31	.67	5.88*	.02	16.20*	.02
Adaptive behavior	8.66*	.01	2.74	.33	2.42*	.00	8.84*	.03
Medium income	5.51*	.16	3.47*	.12	0.74	.61	1.45	.41
High income	2.71*	.25	2.22	.27	2.03	.30	0.09	.85
Parent education	0.06	.85	1.26	.39	0.04	.87	8.39*	.06
Parent employment	1.38	.43	6.97*	.10	0.00	.99	0.16	.79
Expectations: employment	19.55*	<.01	15.95*	<.01	0.51	.56	22.02*	<.01
Expectations: postsecondary	5.65*	.11	38.48*	<.01	0.33	.69	26.94*	<.01
Rural school	2.42*	.18	1.73	.49	7.23*	.07	7.32*	.03
Suburban school	10.79*	.02	2.65*	.25	1.42	.40	0.45	.63
Best practice variables								
Youth involvement	1.25	.50	8.35*	.05	3.72*	.20	18.78*	.01
Family involvement	6.54	.14	0.13	.82	9.27	.05	1.23	.47
Transition planning	0.89	.43	0.42	.45	0.40	.57	4.61*	.11
Work experience	0.19	.76	28.86*	<.01	1.46	.33	0.98	.58
Life skills instruction	5.49*	.12	3.08*	.20	1.46	.28	8.40*	.04
General education	4.46*	.13	4.27*	.14	0.97	.43	4.67*	.19
Interagency involvement	4.12*	.17	1.07	.41	0.48	.60	1.28	.47

Note. χ^2 and corresponding *p*-values calculated using the appropriate weight for each comparison.
*$p<.25$

Table 24

Associations Between Independent Variables and 4-Year Outcome Variables.

Variables	Employment		Postsecondary Education		Enjoys Life		Social Interactions	
	χ^2	*p*	χ^2	*p*	χ^2	*p*	χ^2	*p*
Characteristic variables								
Gender	1.22	.44	0.11	.80	0.27	.70	1.28	.34
Ethnicity	0.46	.61	1.28	.47	5.71*	.04	0.01	.94
High school completion	8.99*	.02	0.05	.84	4.27*	.04	25.23*	<.01
Functional academics	8.16*	.05	15.52*	<.01	0.06	.86	0.18	.72
Self-determination	0.51	.60	0.18	.75	0.69	.36	1.18	.38
Adaptive behavior	1.16	.48	5.90*	.02	0.95	.30	1.38	.41
Medium income	2.28*	.24	9.79*	.01	0.04	.89	0.00	.98
High income	11.71*	.01	5.33*	.08	1.63*	.18	0.08	.79
Parent education	2.84*	.21	8.94*	.01	0.00	.99	0.87	.46
Parent employment	1.96	.32	0.49	.63	0.49	.53	1.30	.34
Expectations: employment	11.27*	<.01	8.27*	<.01	3.52*	.07	5.00*	.07
Expectations: postsecondary	0.10	.80	19.30*	<.01	1.56	.32	0.02	.91
Rural school	5.68*	.01	3.39*	.10	0.24	.63	0.01*	.04
Suburban school	0.33	.67	0.02	.92	0.28	.61	3.72*	.11
Best practice variables								
Youth involvement	3.74*	.20	0.47	.64	0.34	.54	0.14	.81
Family involvement	1.15	.49	1.74	.39	15.65	<.01	0.03	.86
Transition planning	[a]		[a]		[a]		[a]	
Work experience	0.19	.77	2.10	.28	0.66	.43	1.40	.43
Life skills instruction	1.76	.33	0.51	.51	2.45*	.13	0.04	.88
General education	1.48*	.22	0.12	.81	[a]		4.03*	.09
Interagency involvement	0.34	.68	1.71*	.33	0.76	.48	2.20	.30

Note. χ^2 and corresponding p-values calculated using the appropriate weight for each comparison.

[a]Not enough cases to calculate estimate.

Table 25

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Employment with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	0.18	0.60	15.70	1	<.01	1.20	
Gender	0.59	0.47	1.55	1	.21	1.80	0.56
Functional academics	-0.76	0.51	2.23	1	.14	0.47	2.13
Adaptive behavior	-1.16	0.78	2.17	1	.14	0.32	3.17
Expects employment	-1.99	0.94	4.43	1	.04	0.14	7.30
Rural school	0.36	0.48	0.55	1	.46	1.43	0.70
Suburban school	-0.79	0.36	4.72	1	.03	0.45	2.20
Overall model evaluation							
Wald χ^2	30.59			*df* =6	*p* <.001		
Pseudo R^2							
Cox and Snell	.201						
Nagelkerke	.269						
McFadden	.163						
Classification							
Observed value	% correct	Predicted value	Overall predicted %				
No	75.1%	No	59.7%				
Yes	59.5%	Yes	40.3%				
Overall	68.1%						

n =280. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 26

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Postsecondary Education with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-2.35	.77	54.71	1	<.01	0.095	
Functional academics	-7.84	.35	5.07	1	.02	0.46	2.19
Parent employment	0.93	.39	5.62	1	.02	2.53	0.40
Expects employment	-3.74	.82	20.93	1	<.01	0.02	41.96*
Expects postsecondary	-1.41	.40	12.25	1	<.01	0.24	4.09*
Rural school	1.46	.70	4.40	1	.04	4.29	0.23
Suburban school	0.82	.40	4.16	1	.04	2.26	0.44

Overall model evaluation		
Wald χ^2	49.90	*df* =6 *p* <.001
Pseudo R^2		
Cox and Snell	.198	
Nagelkerke	.311	
McFadden	.218	

Classification			
Observed value	% correct	Predicted value	Overall predicted %
No	92.9%	No	86.0%
Yes	40.9%	Yes	14.0%
Overall	82.3%		

n =380. **p*<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 27

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Enjoys Life with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	.45	.87	8.64	1	<.01	1.56	
Adaptive behavior	2.02	1.17	2.96	1	.09	7.51	0.13
Rural school	1.04	.80	1.69	1	.19	2.83	0.35
Suburban school	.04	.73	<.01	1	.96	1.04	0.96

Overall model evaluation			
Wald χ^2	7.64	*df* = 3	*p* = .05
Pseudo R^2			
Cox and Snell	.045		
Nagelkerke	.068		
McFadden	.043		

Classification			
Observed value	% correct	Predicted value	Overall predicted %
No	0%	No	0%
Yes	100%	Yes	100%
Overall	77.7%		

n =170. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 28

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Social Inclusion with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	1.54	.78	3.43	1	.06	4.64	
Ethnicity	.62	.40	2.38	1	.12	1.87	0.53
Self-determination	-.98	.53	3.43	1	.06	0.38	2.66
Parent education	.98	.49	3.96	1	.05	2.67	0.38
Expects postsecondary	-1.38	.49	7.92	1	<.01	0.25	3.98*
Rural school	-.99	.45	4.86	1	.03	0.37	2.70
Suburban school	-.41	.45	0.80	1	.37	0.67	1.50
Overall model evaluation							
Wald χ^2	33.31			*df* = 6	*p* <.001		
Pseudo R^2							
Cox and Snell	.228						
Nagelkerke	.308						
McFadden	.191						
Classification							
Observed value	% correct		Predicted value	Overall predicted %			
No	56.6%		No	36.1%			
Yes	78.1%		Yes	63.9%			
Overall	69.3%						

n =200. *p<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 29

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Employment with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-0.67	.95	54.01	1	<.01	0.51	
High school completion	-1.74	.43	16.63	1	<.01	0.18	5.68*
Functional academics	-1.18	.58	4.09	1	.04	0.31	3.25
Medium income	-0.02	.52	<.01	1	.97	0.98	1.02
High income	-1.88	.57	11.07	1	<.01	0.15	6.57*
Expects employment	-3.46	.66	27.69	1	<.01	0.03	31.81*
Rural school	2.66	.66	16.07	1	<.01	14.25	0.07*
Suburban school	1.21	.66	3.71	1	.05	3.36	0.30
Overall model evaluation							
Wald χ^2	91.91			*df* = 7	*p* <.001		
Pseudo R^2							
Cox and Snell	.346						
Nagelkerke	.463						
McFadden	.309						

Classification			
Observed value	% correct	Predicted value	Overall predicted %
No	65.1%	No	42.4%
Yes	85.9%	Yes	57.6%
Overall	74.3%		

n =120. *p<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 30

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Postsecondary Education with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-0.93		7.63	1	<.01	0.40	
Functional academics	-1.39	.60	5.31	1	.02	0.25	4.02
Medium income	-0.74	.55	1.81	1	.18	0.48	2.10
High income	0.14	.82	0.03	1	.87	1.15	0.87
Parent education	1.02	.61	2.77	1	.10	2.76	0.36
Expects employment	-1.42	1.07	1.75	1	.19	0.24	4.12
Expects postsecondary	-1.07	.56	3.71	1	.05	0.34	2.91
Rural school	1.35	.84	2.59	1	.11	3.86	0.26
Suburban school	0.33	.70	0.22	1	.64	1.38	0.72
Overall model evaluation							
Wald χ^2	27.85			*df* =8	*p* =.001		
Pseudo R^2							
Cox and Snell	.280						
Nagelkerke	.381						
McFadden	.248						
Classification							
Observed value	% correct		Predicted value		Overall predicted %		
No	87.8%		No		70.6%		
Yes	58.1%		Yes		29.4%		
Overall	76.7%						

n =140. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 31

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Enjoys Life with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	0.60	.40	0.64	1	.42	1.82	
Ethnicity	1.59	.66	5.86	1	.02	4.90	0.20
Expects employment	-1.86	1.23	2.30	1	.13	0.16	6.42

Overall model evaluation			
Wald χ^2	6.55	*df* =2	*p* =.04
Pseudo R^2			
Cox and Snell	.126		
Nagelkerke	.188		
McFadden	.121		

Classification			
Observed value	% correct	Predicted value	Overall predicted %
No	3.7%	No	2.9%
Yes	97.3%	Yes	97.1%
Overall	74.3%		

n =80. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 32

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Social Inclusion with Characteristics Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	0.51	0.98	<.01	1	.99	1.67	
High school completion	-2.45	0.82	8.85	1	<.01	0.09	11.56*
Rural school	0.65	0.90	0.52	1	.47	1.91	0.52
Suburban school	0.77	0.61	1.56	1	.21	2.15	0.47
Overall model evaluation							
Wald χ^2	14.38			*df* =3	*p* <.01		
Pseudo R^2							
Cox and Snell	.174						
Nagelkerke	.251						
McFadden	.162						
Classification							
Observed value	% correct		Predicted value	Overall predicted %			
No	38.9%		No	14.1%			
Yes	95.5%		Yes	85.9%			
Overall	79.8%						

n =110. **p*<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 33

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Employment with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-0.80	0.77	25.68	1	<.01	0.45	
Gender	0.28	0.52	0.29	1	.59	1.32	0.76
Functional academics	-0.73	0.62	1.39	1	.24	0.48	2.07
Adaptive behavior	-1.86	0.85	4.78	1	.03	0.16	6.44
Expects employment	-4.05	0.76	28.75	1	<.01	0.02	57.61*
Rural school	0.89	0.60	2.21	1	.14	2.43	0.41
Suburban school	-0.39	0.48	0.67	1	.41	0.68	1.48
Youth involvement	0.40	0.54	0.56	1	.45	1.49	0.67
Family involvement	0.06	0.52	0.02	1	.90	1.07	0.94
Work experiences	-0.21	0.40	0.26	1	.61	0.82	1.23
Life skills instruction	0.93	0.50	3.50	1	.06	2.54	0.39
Interagency involvement	0.33	0.42	0.62	1	.43	1.39	0.72
Overall model evaluation							
Wald χ^2	46.96			*df*=11	*p* <.001		
Pseudo R^2							
Cox and Snell	.267						
Nagelkerke	.357						
McFadden	.225						
Classification							
Observed value	% correct	Predicted value	Overall predicted %				
No	76.1%	No	55.0%				
Yes	71.0%	Yes	45.0%				
Overall	73.8%						
χ^2 difference test							
χ^2_{diff}	16.37	*df* = 5	*p*=.006				

n =200. *p<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 34

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Postsecondary Education with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-3.28	.87	54.88	1	<.01	0.04	
Functional academics	-0.12	.48	0.07	1	.80	0.88	1.13
Parent employment	0.63	.47	1.82	1	.18	1.88	0.53
Expects employment	-3.34	.84	15.94	1	<.01	0.04	28.16*
Expects postsecondary	-1.21	.51	5.78	1	.016	0.30	3.37
Rural school	1.79	.65	7.50	1	<.01	5.99	.17*
Suburban school	1.09	.47	5.26	1	.02	2.96	.34
Youth involvement	-1.11	.51	4.67	1	.03	0.33	3.03
Family involvement	-0.45	.49	0.82	1	.36	0.64	1.56
Work experiences	1.41	.47	8.94	1	<.01	4.10	.24*
Life skills instruction	-0.86	.52	2.75	1	.10	0.42	2.36
Interagency involvement	0.45	.53	0.74	1	.39	1.57	0.64
Overall model evaluation							
Wald χ^2	75.18			*df* = 11	*p* <.001		
Pseudo R^2							
Cox and Snell	.252						
Nagelkerke	.394						
McFadden	.285						
Classification							
Observed value	% correct		Predicted value	Overall predicted %			
No	96.7%		No	86.5%			
Yes	52.7%		Yes	13.5%			
Overall	87.6%						
χ^2 difference test							
χ^2_{diff}	25.28		*df* = 5	*p*<.001			

n =270 **p*<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 35

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Enjoys Life with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-1.19	1.04	4.90	1	.03	.31	
Adaptive behavior	2.04	1.52	1.79	1	.18	7.68	0.13
Rural school	1.53	1.10	1.93	1	.16	4.63	0.22
Suburban school	0.10	1.05	0.01	1	.93	1.10	0.91
Youth involvement	1.11	.63	3.16	1	.08	3.04	0.33
Family involvement	-0.54	.61	0.77	1	.38	0.59	1.71
Work experiences	-0.58	.77	0.57	1	.45	0.56	1.79
Life skills instruction	1.12	.80	1.95	1	.16	3.05	0.33
Interagency involvement	1.27	.65	3.80	1	.05	3.57	0.28
Overall model evaluation							
Wald χ^2	22.58			*df* = 8	*p* <.01		
Pseudo R^2							
Cox and Snell	.178						
Nagelkerke	.262						
McFadden	.172						
Classification							
Observed value	% correct		Predicted value	Overall predicted %			
No	0%		No	0%			
Yes	100%		Yes	100%			
Overall	72.4%						
χ^2 difference test							
χ^2_{diff}	14.94		*df* = 5	*p*=.01			

n =130. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 36

Results of Logistic Regression Analyses for Dependent Variable of 2-Year Social Inclusion with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	1.86	.89	2.78	1	.10	6.42	
Ethnicity	0.89	.48	3.46	1	.06	2.43	0.41
Self-determination	-0.61	.66	0.83	1	.36	0.55	1.83
Parent education	1.04	.45	5.47	1	.02	2.84	0.35
Expects postsecondary	-1.83	.46	15.54	1	<.01	0.16	6.21*
Rural school	-0.66	.62	1.15	1	.28	0.52	1.94
Suburban school	-0.46	.42	1.18	1	.28	0.63	1.58
Youth involvement	-0.95	.39	5.90	1	.015	0.39	2.58
Family involvement	0.24	.50	0.23	1	.64	1.27	0.79
Work experiences	-0.82	.61	1.82	1	.18	0.44	2.28
Life skills instruction	0.73	.66	1.24	1	.27	2.08	0.48
Interagency involvement	-0.08	.64	0.01	1	.91	0.92	1.08
Overall model evaluation							
Wald χ^2	46.32			*df* = 11	*p* <.001		
Pseudo R^2							
Cox and Snell	.307						
Nagelkerke	.413						
McFadden	.270						
Classification							
Observed value	% correct		Predicted value	Overall predicted %			
No	63.3%		No	39.4%			
Yes	77.8%		Yes	60.6%			
Overall	71.7%						
χ^2 difference test							
χ^2_{diff}	13.01		*df* = 5	*p*=.02			

n =170 **p*<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 37

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Employment with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	0.46	1.40	4.59	1	.03	1.58	
High school completion	-0.36	1.66	0.05	1	.83	0.70	1.44
Functional academics	-1.38	.67	4.40	1	.04	0.25	3.96
Medium income	-1.27	.84	2.31	1	.13	0.28	3.56
High income	-2.74	.80	11.86	1	<.01	0.06	15.56*
Expects employment	-3.92	.84	21.86	1	<.01	0.02	50.35*
Rural school	2.99	.93	10.30	1	<.01	19.87	0.05*
Suburban school	0.77	.71	1.16	1	.28	2.15	0.47
Youth involvement	-1.54	.76	4.10	1	.04	0.21	4.68
Family involvement	2.03	.78	6.82	1	<.01	7.60	0.13*
Work experiences	-1.66	.75	4.91	1	.03	0.19	5.24
Life skills instruction	1.13	.68	2.75	1	.10	3.09	0.32
Interagency involvement	0.79	.61	1.69	1	.19	2.20	0.46
Overall model evaluation							
Wald χ^2	188.94			*df* = 12	*p* <.001		
Pseudo R^2							
Cox and Snell	.481						
Nagelkerke	.643						
McFadden	.477						
Classification							
Observed value	% correct		Predicted value	Overall predicted %			
No	88.2%		No	56.0%			
Yes	83.9%		Yes	44.0%			
Overall	86.3%						
χ^2 difference test							
χ^2_{diff}	97.03		*df* = 5	*p*<.001			

n =90. *p<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 38

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Postsecondary Education with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	-2.76	1.92	12.22	1	<.01	0.06	
Functional academics	-3.83	1.03	13.74	1	<.01	0.02	46.20*
Medium income	-1.09	.87	1.59	1	.21	0.34	2.99
High income	1.03	1.13	0.83	1	.36	2.79	0.36
Parent education	-0.24	.71	0.11	1	.74	0.79	1.27
Expects employment	-0.60	1.83	0.11	1	.74	0.55	1.82
Expects postsecondary	-0.35	.82	0.18	1	.67	0.71	1.41
Rural school	1.72	1.03	2.82	1	.09	5.60	0.18
Suburban school	2.68	1.21	4.86	1	.03	14.55	0.07
Youth involvement	-0.69	1.00	0.48	1	.49	0.50	2.00
Family involvement	-3.72	1.33	7.87	1	<.01	0.02	41.28*
Work experiences	1.44	0.71	4.12	1	.04	4.23	0.24
Life skills instruction	-2.17	0.70	9.75	1	<.01	0.11	8.79*
Interagency involvement	2.72	0.92	8.64	1	<.01	15.10	0.07*

Overall model evaluation			
Wald χ^2	81.20	*df* =13	*p* =<.001
Pseudo R^2			
Cox and Snell	.481		
Nagelkerke	.665		
McFadden	.511		

Classification			
Observed value	% correct	Predicted value	Overall predicted %
No	89.5%	No	64.3%
Yes	84.5%	Yes	35.7%
Overall	87.8%		

χ^2 difference test			
χ^2_{diff}	53.35	*df* = 5	*p*<.001

n =100. *p<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 39

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Enjoys Life with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	1.63	1.72	34.38	1	<.01	5.09	
Ethnicity	2.45	.97	6.38	1	.01	11.63	0.09*
Expects employment	-0.43	1.45	0.09	1	.77	0.65	1.53
Youth involvement	-0.26	1.24	0.05	1	.83	0.77	1.30
Family involvement	-1.72	0.92	3.47	1	.06	0.18	5.57
Work experiences	2.97	0.83	12.83	1	<.01	19.46	0.05*
Life skills instruction	1.38	1.00	1.93	1	.17	3.99	0.25
Interagency involvement	-2.51	1.23	4.17	1	.04	0.08	12.35
Overall model evaluation							
Wald χ^2	33.55			*df* =7	*p* <.001		
Pseudo R^2							
Cox and Snell	.362						
Nagelkerke	.560						
McFadden	.432						
Classification							
Observed value	% correct	Predicted value	Overall predicted %				
No	64.3%	No	19.6%				
Yes	92.5%	Yes	80.4%				
Overall	86.5%						
χ^2 difference test							
χ^2_{diff}	27.00	*df* = 5	*p*<.001				

n =60. **p*<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 40

Results of Logistic Regression Analyses for Dependent Variable of 4-Year Social Inclusion with all Independent Variables

Predictor	β	SE β	Wald χ^2	*df*	*p*	e^{β}	Odds ratio
Constant	0.14	1.37	0.71	1	.40	1.15	
High school completion	-1.88	1.17	2.56	1	.11	0.15	6.52
Rural school	0.91	0.86	1.11	1	.29	2.49	0.40
Suburban school	0.92	0.82	1.23	1	.27	2.50	0.40
Youth involvement	-0.48	0.60	0.64	1	.42	0.62	1.61
Family involvement	0.59	0.71	0.68	1	.41	1.80	0.56
Work experiences	1.38	0.52	6.99	1	<.01	3.98	0.25*
Life skills instruction	0.03	0.65	<.01	1	.96	1.03	0.97
Interagency involvement	-0.74	0.73	1.03	1	.31	0.48	2.10
Overall model evaluation							
Wald χ^2		23.14		*df* =8	*p* <.01		
Pseudo R^2							
Cox and Snell		.163					
Nagelkerke		.241					
McFadden		.158					
Classification							
Observed value	% correct	Predicted value	Overall predicted %				
No	30.8%	No	12.7%				
Yes	93.4%	Yes	87.3%				
Overall	77.7%						
χ^2 difference test							
χ^2_{diff}	8.76	*df* = 5	*p*=.12				

n=80. *p<.0125. Estimates calculated using weight from Wave 4 Parent/Youth Survey

Table 41

Predictors with Statistical or Practical Significance in Logistic Regression Models

Outcome	Predictors with odds ratio ≥ 2 or ≤ 0.5			
	RQ3a Characteristics only		RQ3b Characteristics and best practices	
	Predictor	Odds ratio	Predictor	Odds ratio
2-year employment	Parent expects employment	7.30*	Parent expects employment	57.61*
	High adaptive behavior	3.17	High adaptive behavior	6.44
	Attended suburban school	2.20	Received life skills instruction	0.39
	High functional academics	2.13	Attended rural school	0.41
			High functional academics	2.07
4-year employment	Parent expects employment	31.81*	Parent expects employment	50.35*
	Attended rural school	0.07*	Attended rural school	0.05*
	High family income	6.57*	High family income	15.56*
	Completed high school	5.68*	Received family involvement	0.13*
	Attended suburban school	0.30	Received work experiences	5.24
	High functional academics	3.25	Received youth involvement	4.68
			High functional academics	3.96
			Medium family income	3.56
			Received life skills instruction	0.32
			Received interagency involvement	0.46
			Attended suburban school	0.47
2-year postsecondary education	Parent expects employment	41.96*	Parent expects employment	28.16*
	Parent expects postsecondary ed	4.09*	Attended rural school	0.17*
	Attended rural school	0.23	Received work experiences	0.24*
	Attended suburban school	0.44	Parent expects postsecondary ed	3.37
	Parent employed	0.40	Received youth involvement	3.03
	High functional academics	2.19	Attended suburban school	0.34
			Received life skills instruction	2.36
4-year postsecondary education	High functional academics	4.02	High functional academics	46.20*
	Parent expects employment	4.12	Received family involvement	41.28*
	Attended rural school	0.26	Received interagency involvement	0.07*

	Parent expects postsecondary ed	2.91	Attended suburban school	0.07
	Parent has at least some college ed	0.36	Received life skills instruction	8.79*
	Medium family income	2.10	Attended rural school	0.18
			Received work experiences	0.24
			Medium family income	2.99
			High family income	0.36
			Received youth involvement	2.00
2-year enjoyment of life	High adaptive behavior	7.51	High adaptive behavior	0.13
	Attended rural school	0.35	Attended rural school	0.22
			Received interagency involvement	0.28
			Received life skills instruction	0.33
			Received youth involvement	0.33
4-year enjoyment of life	Parent expects employment	6.42	Received work experiences	0.05*
	Minority youth	0.20	Received interagency involvement	12.35
			Minority youth	0.09*
			Received family involvement	5.57
			Received life skills instruction	0.25
2-year social inclusion	Parent expects postsecondary ed	3.98*	Parent expects postsecondary ed	6.21*
	Parent has at least some college ed	0.38	Received youth involvement	2.58
	Higher self-determination	2.66	Parent has at least some college education	0.35
	Attended rural school	2.70	Minority youth	0.41
			Received work experiences	2.28
			Received life skills instruction	0.48
4-year social inclusion	Completed high school	11.56*	Completed high school	6.52
	Attended suburban school	0.47	Received work experiences	0.25*
			Attended suburban school	0.40
			Attended rural school	0.40
			Received interagency involvement	2.10

Note. Predictors are listed in order of magnitude. Odds ratios greater than 1 indicate that youth with this level of the predictor were x times *more* likely to have achieved a successful outcome. Odds ratios less than 1 indicate that youth with this level of the predictor were x times as likely (i.e., 1/x times *less* likely) to have achieved a successful outcome. *p<.0125.

Table 42

Summary of Predictors of Statistical or Practical Significance in Final Models

	2-year outcomes	4-year outcomes
Employment	Parent expects employment (+)* High adaptive behavior (+) Received life skills instruction (-) Attended rural school (-) High functional academics (+)	Parent expects employment (+)* Attended rural school (-)* High family income (+)* Received family involvement (-)* Received work experiences (+) Received youth involvement (+) High functional academics (+) Medium family income (+) Received life skills instruction (-) Received interagency involvement (-) Attended suburban school (-)
Postsecondary education	Parent expects employment (+)* Attended rural school (-)* Received work experiences (-)* Parent expects postsecondary education (+) Received youth involvement (+) Attended suburban school (-) Received life skills instruction (+)	High functional academics (+)* Received family involvement (+)* Received interagency involvement (-)* Attended suburban school (-) Received life skills instruction (+)* Attended rural school (-) Received work experiences (-) Medium family income (+) High family income (-) Received youth involvement (+)
Enjoyment of life	High adaptive behavior (-) Attended rural school (-) Received interagency involvement (-) Received life skills instruction (-) Received youth involvement (-)	Received work experiences (-)* Received interagency involvement (+) Minority youth (-)* Received family involvement (+) Received life skills instruction (-)
Social inclusion	Parent expects postsecondary education (+)* Received youth involvement (+) Parent has at least some college education (-) Minority youth (-) Received work experiences (+) Received life skills instruction (-)	Completed high school (+) Received work experiences (-)* Attended suburban school (-) Attended rural school (-) Received interagency involvement (-)

Note. (+) indicates that level 1 of this variable was associated with more successful outcome (e.g., receiving a best practice variable predicted better outcome than not receiving); (-) indicates that level 1 of this variable was associated with a less successful outcome (i.e., receiving this variable predicted less successful outcome than not receiving). All predictors had odds ratio of ≥ 2 or ≤ 0.5.
*p<.0125.

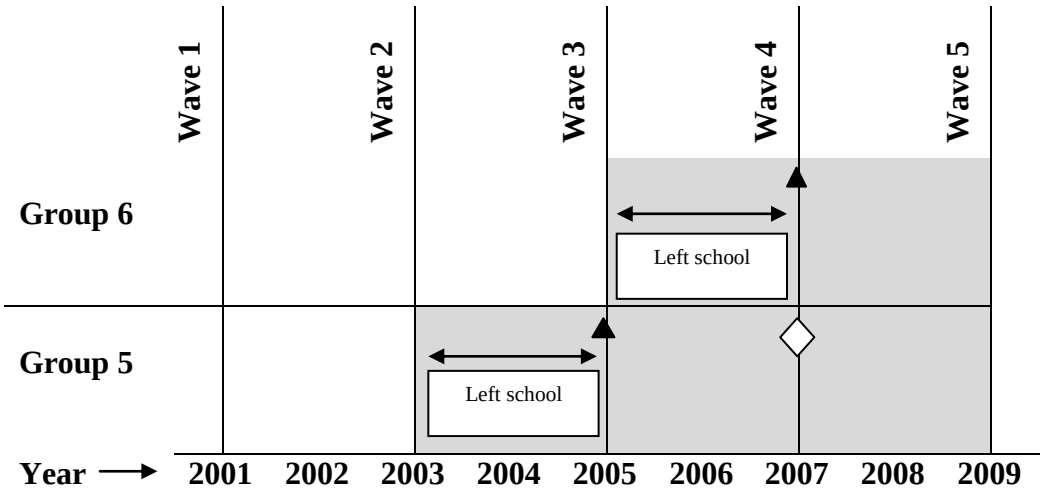

Figure 1: Measurement points for outcomes "up to 2 years" and "between 2 and 4 years" after leaving high school. Note: ▲ = outcomes up to 2 years after leaving high school; ◊ = outcomes between 2 and 4 years after leaving high school.

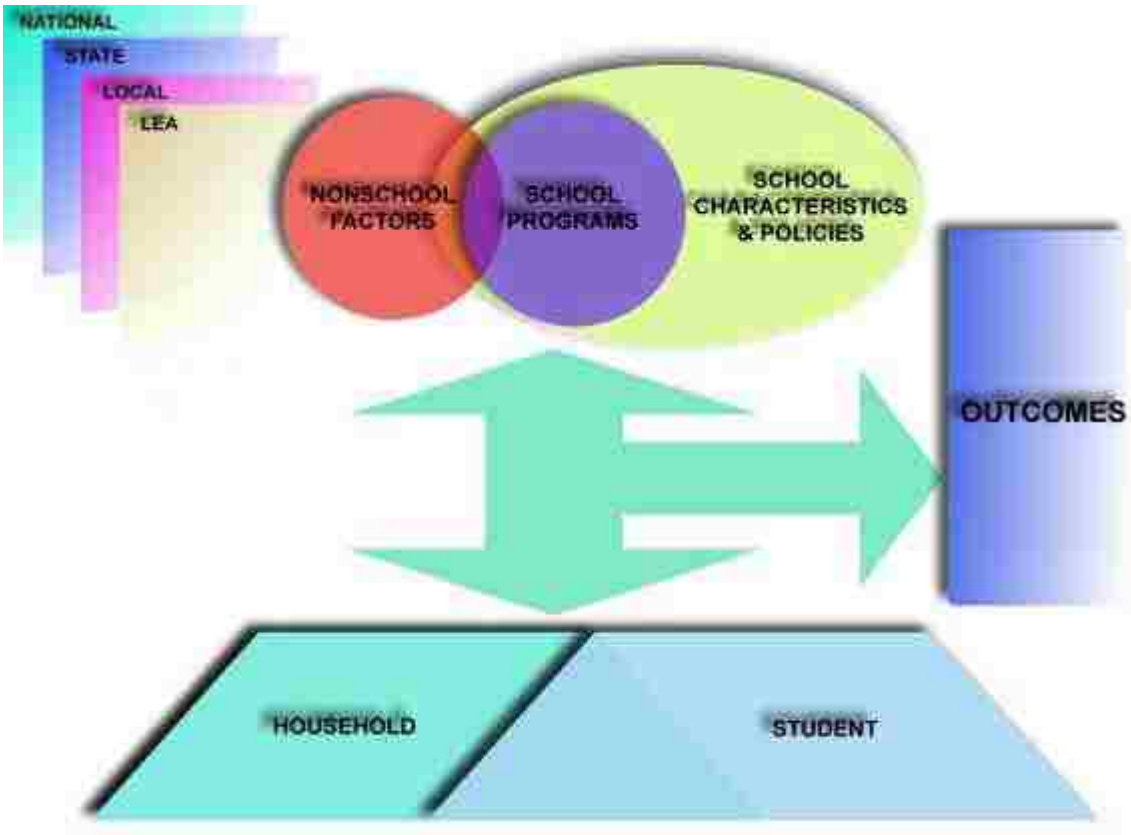

Figure 2. Conceptual framework of influences on postschool outcomes in NLTS2. Adapted from "*NLTS2. Study Design, Timeline, and Data Collection Plan*," by SRI International, 2000, Menlo Park, CA: SRI International, p. 3-2.

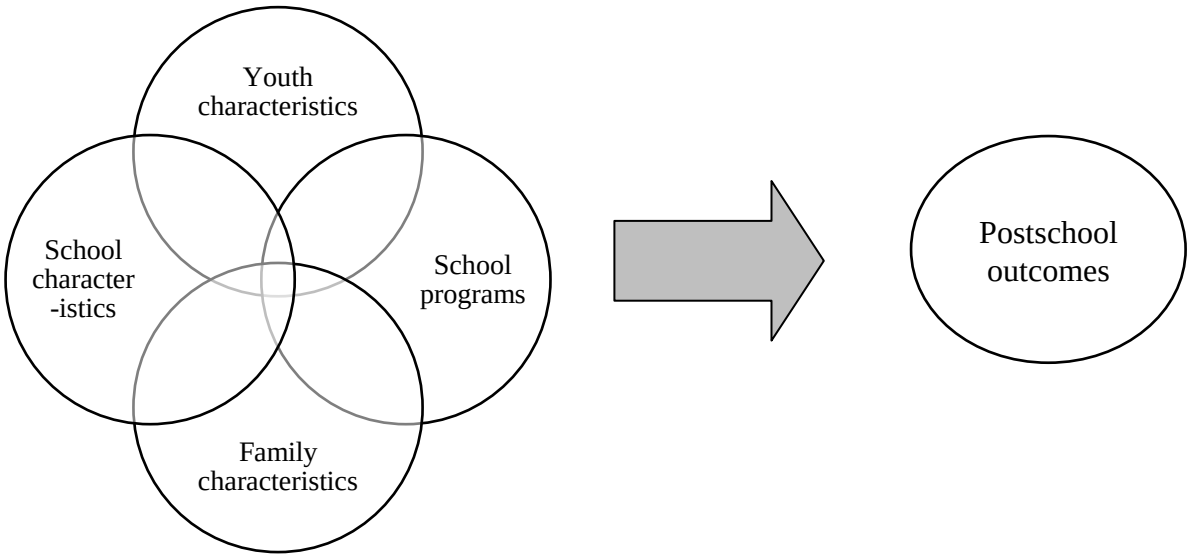

Figure 3. Conceptual framework for the present study.

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Appendix A

Nonexperimental Quantitative Research Studies on the Association between School Program Variables and Postschool Outcomes.

Study	Type	Sample	Analysis	Postschool outcomes measured	Findings	
					School program factors[a]	Other factors[a]
Aspel, Bettis, Test, & Wood (1998)	Comparative: Program evaluation data	Participants in TASSEL program All disabilities n=27(6-month outcomes), n=66 (18-month outcomes), n=27 (30-month outcomes)	Comparison of outcomes to NLTS outcomes	Competitive employment Wages (earned above $5/hour) PSE enrollment Independent living (where youth lived) Leisure (belonged to community group, had hobby)	Program that included: Academic or occupational course of study Individualized transition planning Parent involvement	
Baer et al. (2003)	Correlational: State-level data	Ohio All disabilities n=140	Logistic regression	1-3 years out Current full-time employment Participation in PSE since high school	Predictors of employment: Vocational education Work-study participation Predictors of PSE: Participation in regular academics	Predictors of employment: Rural school Learning disability Predictors of PSE Suburban school
Benz, Lindstrom, & Yovanoff (2000)	Correlational: Program evaluation data	Participants in Youth Transition Program All disabilities n=709	Logistic regression	Engagement in employment or continuing education at program exit	2 or more paid jobs while in program 4 or more transition goals completed while in program	

Benz, Yovanoff, & Doren (1997)	Correlational: State-level data	Oregon and Nevada All disabilities n=218	Logistic regression	1 year out Competitive employment (>20 hours per week and >$4.25/hour) Productive engagement (engaged for 12 total months in work half time or more only, going to school half time or more only, working and going to school, or participating full time in the military)	Predictors of employment: 2 or more jobs while in last 2 years of high school	Predictors of employment: Gender (female less likely) High social skills at exit High job search skills at exit No continuing vocational instruction needs 1 year out Predictors of productive engagement: Minority status (negative) Having children (negative) High career awareness skills at exit No continuing vocational instruction needs 1 year out No continuing social instruction needs 1 year out
Blackorby, Hancock, & Siegel (1993)	Correlational: NLTS	NLTS Wave 1 All disabilities n=939	Correlated factor analysis	Up to 2 years out Latent construct of postschool success (includes measured variables: employment status, PSE, wages, independent living status, degree of social interaction	Latent construct of school programs significantly correlated with postschool success (significant measured variables with positive association: percentage of time spent in regular education, took	Individual aptitude (IQ and self-care ability) Family thrive (positive association: employment, education, income of head of household, one- or two-parent household) School thrive (positive association: average daily attendance of school, compensatory education programs available at school;

				and having trouble with the law)	academics in regular education; Negative association: received occupational therapy/life skills training)	negatively associated: percentage of students from low-income families, percentage of special education students)
Cameto (1997)	Correlational: NLTS	NLTS Waves 1 and 2 Mental retardation n=221	Factor analysis, logistic/ multiple regression	Up to 3 years out Employment (current employment, wages) Social integration (number of social contacts in a typical week; how well youth interacts with others; productive engagement in employment, PSE, job training , or raising children; raising children) Independent living (using community resources, use of financial instruments, living situation)	Predictors of employment: Percentage of time spent in regular education Hours of life skills education Predictors of social integration: Percentage of time spent in regular education (predicted productive engagement) Predictors of independent living: Hours of life skills education (predicted financial management)	Predictors of employment: Ethnicity (minority = less likely to be employed) Predictors of social integration: Ethnicity (minority = more likely to be parenting, less likely to get along well with others) Gender (females = more likely to be productively engaged and socially involved) Level of mental retardation (youth with mild mental retardation = more likely to be productively engaged but less likely to be socially involved High school completion (dropped out = less likely to be productively engaged) Overall GPA (higher GPA =

					Job training and occupational vocational education NS Hours of life skills instruction negatively associated with use of community resources	with lower productive engagement) Predictors of independent living: Ethnicity (minority = lower financial management) Level of mental retardation (youth with moderate MR = more likely to use community services independently) Family income (high income = higher financial management but lower use of community resources) School attendance (more days absent = lower financial management skills and lower level of independent living)
Colley & Jamison (1998)	Comparative: State-level data	New York All disabilities n=720	Descriptive (cross-tabulation, no tests of significance)	9 months out Employment (Current, full-time, wages >$4.25/hour, receiving benefits, worked most or all of the time since high school, satisfaction)	Work experience Occupational education	
DiGiacomo	Comparative:	Philadelphia	ANOVA (IV	1-7 years out	Inclusion in high	

(2002)	City-level data	area All disabilities n=100	= level of inclusion, DV = employment success)	Employment success (scale created by weighting outcomes according to success then summing for each youth)	school (percentage of time spent in regular education) Work experience Inclusion across school career NS	
Doren & Benz (1998)	Correlational: State-level data	Oregon and Nevada All disabilities n=212	Logistic regression	1 year out Employment (competitively employed and earning >$4.25/ hour)	2 or more jobs while in high school	Found job through self-family-friend network Gender (females = less likely to be employed) For women only: Family income (low = less likely to be employed) Self esteem (low = less likely to be employed)
Fabian, Lent, & Willis (1998)	Correlational: Program evaluation data	Participants in Bridges…from School to Work program at 6 national sites All disabilities n=2258	Correlations, Discriminant analyses	6 months out Engagement in employment or PSE	Completion of internship Acceptance of job offer at end of internship	
Halpern, Yovanoff, Doren, & Benz	Correlational: State-level data	Oregon, Nevada, and Arizona All disabilities	Logistic regression	1 year out Participation in PSE (all types)	Participation in transition planning Instruction needed and received in	Demographic variables found not to predict PSE

(1995)		n=987			reading, writing, math, problem solving, and getting along with people Student's satisfaction with high school instruction Inclusion in high school NS	
Harvey (2002)	Correlational: National-level data	National Education Longitudinal Study 1988-1994 All disabilities n=7007	Multiple linear and logistic regression	Up to 2 years out Employment (worked for 1 or more months in 1993, mean annual earnings, average hours worked per week, job satisfaction) PSE (participating in any type of PSE)	Predictors of employment: Vocational education coursework Predictors of PSE: Lower PSE if participated in vocational education	Predictors of employment: Marital status (married = more likely to be employed) Gender (males more likely to be employed) Urbanicity (urban and suburban more likely to be employed, rural more likely to have job satisfaction) Ethnicity (white = more likely to be employed) SES (low = more likely to be employed) Predictors of PSE: High school diploma Economic responsibility for another (responsibility = less likely to be in PSE) Marital status (married = less

						likely to be in PSE) Ethnicity (White = less likely to be in PSE) SES (low = less likely to be in PSE)
Hasazi, Gordon, & Roe (1985)	Comparative: School district-level data	Vermont (9 school districts) All disabilities n=462	Cross-tabulation, chi-square, ANOVA	Length of time out not specified Currently employed Wages of current job Percentage of time employed since high school	Factors associated with current employment: Vocational education Part-time or summer job in high school Work experience in high school NS Factors associated with wages: Summer job in high school All others NS Factors associated with percentage of time employed since high school: Part-time or summer job in high school	Factors associated with current employment: Urbanicity (urban = more likely) Gender (male = more likely) High school placement (resource room= more likely) High school completion (graduated = more likely) Factors associated with wages: All NS Factors associated with percentage of time employed since high school: Gender (male = higher percent) High school placement (resource room=higher percent)

					Work experience in high school NS	
Hasazi, Gordon, Roe, & Hull (1985)	Comparative: School district-level data	Vermont (17 special class programs) Mental retardation n=243	Cross-tabulations, chi-square	Length of time out not specified Currently employed Wages of current job	Factors associated with current employment: Vocational education Part-time or summer job in high school Work experience in high school NS Factors associated with wages: Vocational education Work experience program Part-time job outside high school Summer job in high school NS	Factors associated with current employment: Gender (male = more likely) Handicapping condition ("educable mentally retarded" more likely to be employed than "trainable mentally retarded")
Heal, Khoju, &	Correlational: NLTS	NLTS Waves 1 and 2	Hierarchical multiple	Up to 2 years out Quality of life	School program variables accounted	Family and location variables accounted for about 5% of

Rusch (1997)		All disabilities n=713	linear regression, canonical correlation analysis	3 composite scores: Esteem (6 indicators including employment and PSE) Independence (5 indicators of independent living skills) Support (6 indicators including family support and community services)	for about 5% of variance in each quality of life domain Percentage of time spent in regular education significantly positively correlated with esteem and independence domains and negatively correlated with support domain	variance in each quality of life domain Individual characteristic variables accounted for an additional 20-40% of variance Competence (canonical variable characterized by high esteem and independence and low support) predicted by mild disability, higher IQ, and integrated school program
Heal, Khoju, Rusch, & Harnisch (1999)	Correlational: NLTS	NLTS Waves 1-3 All disabilities n=505	Multiple linear regression	Up to 4 years out Quality of life 3 composite scores: Social relationships (strongest factor: frequency of contacts with friends) Employment (strongest factors: hours worked and	School program variables did not account for significant amount of variance in each quality of life domain Percentage of time spent in regular education a significant predictor of employment and	Family and location variables did not account for significant amount of variance in each quality of life domain Individual characteristics accounted for 5-7% of variance in each domain IQ a significant predictor of independence but not social relationships or employment

				annual income) Independence (strongest factors: community living skills, adaptive behavior, ratings of independence)	independence	
Heal, Rubin, & Rusch (1998)	Correlational: NLTS	NLTS Waves 1-3 All disabilities n=5,462	Hierarchical linear regression	Up to 4 years out Residential independence (scale created that ranked current living situation by level of independence)	None (personal characteristics were stronger predictors)	Positive association: Adaptive behavior (higher living skills) IQ Learning disability, speech, or hearing impairment Negative association: Mental retardation
Heal & Rusch (1994)	Correlational: NLTS	NLTS Wave 1 and 2 All disabilities, n=2,686	Multiple linear regression	Up to 2 years out Residential independence (scale created that ranked current living situation by level of independence)	None (personal characteristics were stronger predictors)	Positive association: Age Cognitive ability Negative association: Number of siblings (higher number) Severity of disability (mental retardation or more severe) Used specialized transportation Bad conduct (more problem behaviors)
Heal &	Correlational:	NLTS Waves	Hierarchical	Up to 2 years out	None (individual	Positive association:

Rusch (1995)	NLTS	1 and 2 All disabilities n=2,405	linear regression	Level of employment (Scale 0-2: none/sheltered, part-time, full-time)	characteristics were stronger predictors)	Household income Gender (males higher) Intelligence Self-care High school diploma Independent living skills Negative association: Receiving public aid Used specialized transportation Severity of disability
Hebbeler (1993)	Correlational: NLTS	NLTS Waves 1-3 All disabilities n=1,888	Bivariate correlations and multivariate analyses	Up to 3 years out PSE (enrollment in academic or vocational program) Employment (current competitive paid job, wage) Residential independence (living alone) Community participation (composite measure of engagement in PSE or work, lived independently, and	Percentage of time spent in regular education predicted employment, wages, and community participation but not PSE	

				were socially involved)		
Kraemer, McIntyre, & Blacher (2003)	Correlational: State-level data	California Moderate – severe mental retardation n=188 (85 out of high school)	Stepwise multiple linear regression	Length of time out not specified Quality of life index – total score on Quality of Life Questionnaire (also scores on 4 subscales: Satisfaction, competence, empowerment, social belonging)	Predictors of overall quality of life: Parent's knowledge of adult services Predictors of competence/ productivity subscale: Parent involvement in transition planning, Parent's knowledge of adult services Predictors of empowerment subscale: Parent's knowledge of adult services Predictors of social belonging subscale: Paid work experience in school	Predictors of overall quality of life: Adaptive behavior (higher scores = greater quality of life) Size of youth's social network (larger = greater quality of life) Parent perception that youth had negative impact on the family (greater = lower quality of life)
Luecking & Fabian	Correlational: Program	Participants in Bridges…from	Logistic regression	6, 12, and 18-months out	Predictors of 6-month outcomes:	Predictors of 6-month outcomes:

(2000)	evaluation data	School to Work program at 7 national sites All disabilities n=3,024		Competitive employment for at least minimum wage	Completion of internship Job offer at end of internship Wages during internship Predictors of 12-month outcomes: Completion of internship Job offer at end of internship Predictors of 18-month outcomes: None	Learning disability (vs. other disabilities) Predictors of 12-month outcomes: Emotional disabilities (less likely to be employed compared to other disabilities) Race (minority less likely to be employed than nonminority) Predictors of 18-month outcomes: Emotional disabilities (less likely to be employed compared to other disabilities) Race (minority less likely to be employed than nonminority)
Luftig & Muthert, 2005	Comparative: Program evaluation data	Participants in a program at a vocational-technical center Mild mental retardation or learning disabilities n=36	Comparison of outcomes to NLTS outcomes	Up to 5 years out Currently employed Wages (hourly pay) Receiving health or other benefits	Participation in a program that included: Vocational education Inclusion in general vocational education	Disability (learning disability = more likely to be employed than mental retardation)

Miceli (2008)	Correlational: NLTS2	NLTS2 Waves 1-3 All disabilities Model 1 n=2910 Model 2 n=2600 Model 3 n=2500 Model 4 n=1620 Model 5=450	Logistic regression	Up to 4 years out Enrollment in PSE (2-year or 4-year college)	Predictors in model 5 (12 characteristics and 8 school program variables): Leadership role in transition planning Vocational education Youth met with teachers to discuss PSE goals	Predictors in model 1 (5 characteristics): Disability (mental retardation less likely to be in PSE) Household income Cognitive functioning skills Predictors in model 2 (7 characteristics): Disability Cognitive functioning Parent education Parent expectations Predictors in model 3 (11 characteristics): Disability Gender (female more likely) Household income Race/ethnicity (African American or Other more likely than White) Cognitive functioning skills Parent education Parent expectation Participation in extra-curricular activities Financial management Grades High school completion

						Predictors in model 4 (12 characteristics): Disability Parent education Participation in extra-curricular activities Financial management skills Grades High school completion Predictors in model 5 (12 characteristics and 8 school program variables): Household income Race/ethnicity (Hispanic or Other more likely) Cognitive functioning skills Parent education Participation in extra-curricular activities Grades High school completion
Rabren, Dunn, & Chambers (2002)	Correlational: State-level data	Alabama All disabilities n=1,393	Logistic regression	1 year out Currently employed	Had a job at time of school exit	School setting (urban = more likely to be employed) Gender (male = more likely) Disability (learning disability = more likely to be employed than other disabilities) Supported by MH/MR (not

						supported = more likely to be employed)
Schalock et al. (1986)	Correlational: Program evaluation data	Participants in a job exploration and training model Specific learning disability, educable mental handicap, or mental retardation n=108	Stepwise multiple regression	Up to 5 years out Present status (5 categories: employed/ unemployed/ school/ community-based mental retardation program/ other) Current living (3 categories: supervised/ semi-independent/ independent) Income source (3 categories: parents or relatives/ public/ personal) Number of jobs Number of months employed Total earnings Hours worked per week Wages per hour Weeks employed per year	Number of semester hours in vocational programs predicted income source, number of months employed, total earnings, hours, wages, and weeks worked per year Level of family involvement predicted all dependent variables	Disability predicted all outcomes except number of jobs and wages per hour (learning disabilities associated with better outcomes)
Shandra & Hogan	Correlational: National-	National Longitudinal	Generalized estimating	Length of time out of school not	School-based school-to-work	Severity of disability (negatively associated with

(2008)	level data	Survey of Youth (1997) All disabilities n=2,254	equations	specified Employment: Annual income Hourly compensation Part or full time work status Stable employment (same job for at least 13 weeks in a year) Insurance benefits or paid sick days	program positively associated with annual income, stable employment, and full-time work Participation in cooperative education (combined academic and vocational studies and job in related field) positively associated with annual income, full-time work, and receiving benefits School-sponsored enterprise or being a career major positively associated with stable employment Participation in technical preparation positively associated with	stable employment, annual income, and hourly pay) Gender (male positively associated with annual income, hourly pay, full-time employment, and receiving health insurance) Race (Black negatively associated with annual income, hourly pay, stable employment, and full-time employment; Black or Hispanic positively associated with receiving paid sick days) SES (positively associated with annual income, hourly pay, and stable employment) High school diploma (positively associated with all)

					full-time employment Participation in mentorship (being matched to an individual in an occupation) positively associated with paid sick days Internship experiences positively associated with hourly pay	
Sitlington, Frank, & Carson (1992)	Comparative: State-level data	Iowa Learning disabilities, behavioral disorders, mental disabilities n=2,476	Cross-tabulation Chi-square tests	1 year out Competitively employed vs. unemployed	No significant differences in employment between groups that received or did not receive vocational training or groups that received or did not receive work experience in school Significant difference in	Gender (higher proportion of females unemployed) Disability (higher proportion of mental disabilities unemployed than learning disabilities)

					outcomes for youth with mental disabilities who had paid job in high school compared to those who did not	
Sun (2007)	Correlational: NLTS	NLTS Waves 1-3 n=200	Probit regression	Out up to 4 years Living independently at Wave 3	Number of hours spent in academic classes	Positive association: Education level of parent Number of siblings IQ High school diploma Negative association: Gender (male less likely to be independent) Ethnicity (Nonwhite less likely)
Thompson (1996)	Correlational: School district-level data	Minneapolis Public Schools All disabilities n=98	Multiple regression	1 year out Employment integration Residential integration Formal support networks Personal satisfaction Recreational integration (all continuous scales but not	Instruction in independent living in addition to academic and vocational instruction predicted residential integration	Gender (males more successful than females) significant predictor of: employment integration Disability (learning disabilities or emotional/behavioral disorders more successful than developmental disabilities) significant predictor of: employment integration, residential

				defined)		integration, formal support (developmental disabilities more likely to receive agency support)
Wagner, Blackorby, Cameto, & Newman (1993)	Correlational: NLTS	NLTS Waves 1-3 All disabilities n=1,888	Multiple linear and logistic regression	Out up to 3 years Enrollment in PSE at any time since leaving high school (academic or vocational) Current employment (paid job, salary) Independent living (living alone and not as a dependent) Community participation (includes productive engagement in PSE or work, independent living, and social activities; 5 profiles created from these variables with high and low community	Predictors of PSE: Parent involvement (PSE vocational) Transition planning goal for PSE School contacts for PSE Predictors of employment: Time spent in regular education Vocational education School contacts for employment (substantial but NS) Predictors of independent living: Predictors of community participation: Parent involvement Time spent in regular education	Predictors of PSE: Parenting (being a parent =less likely) Household income (low = less likely) Single parent (from single parent family = more likely to attend academic PSE) Parent expectations High school completion Predictors of employment: Self-care skills Gender (higher wages earned by males) Ethnicity (less employment and pay for African American) Low income (low = lower earnings) Parenting (mothers less likely to be employed) Predictors of independent living: Functional mental skills Gender (male = less likely)

				participation profiles serving as outcomes)	Vocational education Work experience NS for all	Ethnicity (African American or Hispanic = less likely) Parenting (being a parent = more likely) Parent expectations Predictors of community participation: Parent expectations High school completion Ethnicity (African American = less likely)
White & Weiner (2004)	Correlational: County-level data	Orange County, California (20 schools in 12 school districts) Severe disabilities n=104	Correlation	Immediately following graduation Integrated employment (job/ workshop/ no job)	Amount of time spent in community-based training including on-the-job training Level of integration with age-appropriate peers (i.e., college setting most integrated)	Ethnicity, gender, and living situation NS
Zafft, Hart, & Zimbrich (2004)	Comparative: Program evaluation data	Participants in College Career Connection (individualized inclusive college	Chi-square test (comparison to sample of youth who did not	Length of time out not specified Competitive vs. sheltered employment Need for	Participation in a program that included: Inclusive college experiences Individualized	

	experience project) Intellectual disabilities n=16	participate in the program)	employment supports	planning Interagency collaboration (Greater percentage of youth who participated in this program employed and no longer needed employment supports than percentage of nonparticipants)

[a] = unless otherwise noted, relationships between factors and outcomes are positive (i.e., higher levels of the factors associated with higher levels of the outcome); PSE = postsecondary education; NS = not significant; IV = independent variable; DV = dependent variable.

Appendix B

Independent and Dependent Variables:

Sources, Variable Names, Survey Questions, and Coding

Variable	Wave	Instrument	Variable Name	Survey Question	Coding	Reference for Recoding
			School Program Variables			
Youth involvement	2	School program	npr2E9 (npr1E9)	Which of the following best describes this student's role in his or her transition planning?	NLTS2 coding: 1= This student has not attended planning meetings or participated in the transition planning process. 2=This student has been present in discussions of transition planning, but participated very little or not at all. 3=This student has provided some input into transition planning as a moderately active participant. 4=This student has taken a leadership role in the transition planning process, helping set the direction of discussions, goals, and programs or service needs identified. Recoding: 1 = youth involvement occurred (response of 3 or 4) 0= youth involvement did not occur (response of 1 or 2)	Cameto et al. (2004)
Family involvement	2	Parent	np2E2c (np1E2c)	During either this or last school year have you or another adult in your household	NLTS2 coding: 1=Yes, 0=No	

				met with teachers to set goals for what youth will do after high school and make a plan for how [he/she] will achieve them? Sometimes this is called a transition plan?		
Transition planning	2	School program	npr2E1 (npr1E1)	Has there been planning for transition to adult life for this student?	NLTS2 coding: 1=Yes, 0=No	
Work experiences	2	School program	npr2C13…[a-b] (npr1C13…[a-b])	What percentage of this student's school day is currently spent in a) School-sponsored work experience on the school campus, b) School-sponsored work experience off campus?	NLTS2 coding: 0=None, 1=1-24%, 2=25-49%, 3=50=74%, 5=75-99%, 5=100% Recoding: 1 = Work experiences occurred if the sum of these two items is greater than 0 (i.e., youth spent any amount of time greater than 0 in work experiences either on or off the school campus). 0 = Work experiences did not occur if sum of these two items equals 0.	Miceli (2008) Wagner et al. (2003b)
Life skills instruction	2	School program	npr2A3h (npr1A3h)	Student receives life skills or social skills instruction	NLTS2 coding: 1=Yes, 0=No	

Inclusion in general education	2	School program	npr2A3a_1, npr2A3b_1, etc up to npr2A3k_1 (npr1A3a_1, npr1A3b_1, etc up to npr1A3k_1)	Indicate the setting in which the student in taking each subject listed below (language arts, math, science, social studies/ history, foreign language)	NLTS2 coding: 1=Yes, 0=No for general education setting in each subject. Recoding: 1 = Inclusion in general education occurred if response was "Yes" to general education setting for any of these six academic subjects 0 = Inclusion did not occur if response was "No" for all of these subjects	Wagner et al. (2003c)
Interagency involvement	2	School program	npr2E8_[01-15] (npr1E8_[01-15])	Who has actively participated in this student's transition planning (e.g., involved in discussions on choosing services or goals)?	NLTS2 coding: 1=Yes, 0=No for each of 15 types of participants Recoding: 1 = Interagency involvement occurred if the response was "Yes" to any of: 09:Vocational Rehabilitation Agency counselor 10: Staff of the Social Security Administration 11: Staff of other outside service agency or outside consultant (e.g., employment service, mental health service 12: Employer 13: Representative of postsecondary education institution	Cameto et al. (2004)

					0 = Interagency involvement did not occur if response was "No" to all of the above	
				Youth characteristics		
Gender	2	Parent	w1_GendHdr 2001 W2_GendHdr 2003	Is youth male or female?	NLTS2 coding: 1=Male, 2=Female Recoding: 0=Male, 1 = Female	
Ethnicity	2	Parent	W1_EthHdr 2001 W2_EthHdr 2003	Choose category that best describes youth's race	NLTS2 coding: 1=White, 2=African American, 3=Hispanic, 4=Asian/Pacific Islander, 5=American Indian/Alaska Native, 6=Other/multiple Recoding: 0=white, 1=all other (minority)	Cameto (1997) Heal & Rusch (1994) Heal & Rusch (1995) Heal et al. (1997)
High school completion status	3 or 4	Parent/ youth	W3LeaveHdr 2005 W4LeaveHdr 2007	When youth left school did [he/she] graduate, take a test and receive a diploma or certificate without taking all of [his/her] high school classes, drop out or stop going, was	NLTS2 coding: 1=Graduated or received a certificate/tested to get diploma, 2=Dropped out/left for some other reason Recoding: 0=graduated, 1=dropped out	Wagner et al. (2005)

				[he/she] suspended or expelled, was [he/she] older than the school age limit] or did [he/she] leave for some other reason?		
Functional academic skills	2	Parent	np1MentalSkill Create from np2G3a…[a-h]	How well does youth do each of the following on his/her own, without help? (a) Tell time on a clock with hands, (b) Read and understand common signs like Stop, Men, Women, or Danger, (c) Count change, (d) Look up telephone numbers in the phone book and use the phone?	NLTS2 coding: Each survey question scored as 1=Not at all well, 2= Not very well, 3= Pretty well, 4= Very well. Scale created by summing these 4 items (total 4-16). Recoding: 0=scores 12-16 (high), 1=scores 4-11 (low)	Miceli (2008)
Self-determination	1	Teacher or school program	nxm1Self Advoc	Created variable: In this setting, how well does youth ask for what he/she needs? (general education setting used if available, filled in special education	NLTS2 coding: 1=Not at all well, 2= Not very well, 3= Well, 4=Very well Recoding: 0= Low (1 or 2) 1= High (3 or 4)	Cameto et al. (2004)

				setting, then vocational education setting)		
Adaptive behaviors	1	Parent	np1SelfCareSkill	How well does youth a) dress self completely, and b) feed self completely	NLTS2 coding: Each item scored as 1= Not at all well, 2= Not very well, 3= Pretty well, 4= Very well Scale created by summing these 2 items. Recoding: 0 = 2-5 (low), 1=6-8 (high)	No consistent coding in previous reports (Wagner et al., 2003b; Wagner et al., 2005)
				Family Characteristics		
Household income	2	Parent	w1_Income Hdr2001 W2_Income Hdr2003	Which group best describes the total income of all persons in your household in the last tax year	NLTS2 coding: 1=$25,000 or less, 2= $25,001-50,000, 3= More than $50,000	
Head of household education	2	Parent	np2H7 np1K8	What is the highest year or grade you/ youth's mother/father/ legal guardian finished school?	NLTS2 coding: Coded as level of education between 1 and 10 (e.g., 1=8th grade or less, 10=PhD, MD, JD, LLB, or other professional) Recoding: 0= High school or less (1, 2, 3) 1= Some college (4, 5, 6, 7, 8, 9, 10)	Similar to Wagner et al. (2003b)

Head of household employment	2	Parent	np1k9a np2H8a	Do you/ youth's mother/father/ legal guardian have a paid job now?	NLTS2 coding: 1=Yes, 0=No	
Parent expectations: employment	2	Parent	np1J9 np2G12a	How likely do you think it is that youth eventually will get a paid job?	NLTS2 coding: 1= Definitely will, 2= Probably will, 3= Probably won't, 4= Definitely won't ((Note: set to 1 if youth already has paid job) Recoding: 0= probably or definitely won't 1= probably or definitely will	Wagner et al. (2005)
Parent expectations: post-secondary education	2	Parent	np1J2 np2G6	How likely do you think it is that youth will attend school after high school?	NLTS2 coding: 1= Definitely will, 2= Probably will, 3= Probably won't, 4= Definitely won't (Note: set to 1 if youth has already taken postsecondary education classes, not asked if parent reported that youth will probably or definitely not get a regular diploma) Recoding: 0= probably or definitely won't 1= probably or definitely will	Miceli (2008) Wagner et al. (2005)
School Characteristics						

Urbanicity	1	School characteristics	W1_urb3	(Created variable – survey question not specified)	NLTS2 coding: 1=rural, 2=suburban, 3=urban
			Dependent Variables		
Currently employed (up to 2 or 4 years out)	3 or 4	Parent/ Youth survey	np3T7a_L7a_I2b np4T7a_L7a	Do you have a paid job now other than work around the house?	NLTS2 coding: 1=Yes, 0=No (set to youth response if youth interviewed, otherwise set to parent response)
Ever enrolled in PSE (up to 2 or 4 years out)	3 or 4	Parent/ Youth survey	np3S3aS4aS5a_D4a1D4a2D4a3_ever np4S3aS4aS5a_D4a1D4a2D4a3_ever	Since leaving high school have you ever taken classes at a 2-yr, junior, or community college, postsecondary vocational, business, or technical school, or 4-yr college or university?	NLTS2 coding: 1=Yes, 0=No (combined responses across all of these options, set to youth response if youth interviewed, otherwise set to parent response)
Enjoys life (up to 2 or 4 years out)	3 or 4	Parent/ Youth survey	np3V2a np4V2a	During the last week how often did you feel that you enjoyed life?	NLTS2 coding: 1=Never or rarely, 2= Sometimes, 3= A lot of the time, 4= Most or all of the time (will have lower response rate for this item as it was not asked of parents) Recoding: 1=A lot/most/all of the time

					0=Never/rarely/sometimes	
Social interactions (up to 2 or 4 years out)	3 or 4	Parent/ Youth survey	np3P10_J6 np4P10_J6	During the past 12 months, about how many days per week did you usually get together with friends outside of organized activities or groups?	NLTS2 coding: 0 = Never 1 = Sometimes but not every week 2 = 1 day a week 3 = 2 or 3 days a week 4 = 4 or 5 days a week 5 = 6 or 7 days a week (set to youth response if youth interviewed, otherwise set to parent response) Recoding: 0 = Less than once a week (0 or 1) 1 = At least once a week (2 – 5)	Newman et al. (2009) Wagner et al. (2003a) Wagner et al. (2005)

Curriculum Vita

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EDUCATION

May 2011 (anticipated)	Ph.D.	Lehigh University Special Education Advisor: Dr. Linda Bambara Dissertation: Best Practices in Transition to Adult Life for Youth with Intellectual Disabilities: A National Perspective Using the National Longitudinal Transition Study-2 Qualifying project: Postsecondary education for transition-age students with intellectual and other developmental disabilities: A national survey
2006	M.Ed.	Lehigh University Special Education
2002	B.Sc.	University College London, UK Mathematics with Modern Languages

PROFESSIONAL EXPERIENCE

1/2011 - Present	Instructor/Assistant Professor of Special Education Arcadia University
12/2008-12/2010	Graduate Assistant, Autism Service, Education, Research, and Training (ASERT) Regional Center at Lehigh University.
8/2006-12/2008	Graduate Assistant, Lehigh University Transition and Assessment Services.
Fall 2006-Spring 2008	Research Assistant, Project REACH qualitative study (investigators: Drs. Bambara and Manz), Lehigh University.
10/2004-8/2006	Program Manager, Lehigh Support for Community Living, Lehigh University.
5/2004-10/2004	Data Collector, Project REACH at Lehigh University.

TEACHING EXPERIENCE

Graduate classes:

Spring 2011	Instructor: Practitioner Research II, Seminar on Inclusive Education and Postsecondary Life, Disability Studies and Special Education Law, Arcadia University
Fall 2010	Adjunct Instructor: Disability Studies and Special Education Law, Arcadia University
	Teaching Assistant: Life Skills and Transition Strategies, Lehigh University
Fall 2008	Syllabus development: Doctoral Seminar in Transition (instructor: Dr. Linda Bambara), Lehigh University.
Spring 2008	Teaching Assistant: Education and Inclusion for Individuals with Special Needs (instructor: Dr. Lee Kern), Lehigh University.

Professional development trainings:

April 2010	Presenter: *Best Practices in Transition: Critical Components Related to Educating Adolescents with Autism*. PaTTAN webinar in collaboration with Devereux CARES.
January-March, 2010	Instructor: Series of trainings on Positive Behavior Support and Functional Behavior Assessment for parents of children with autism, ARCH of Lehigh Valley.
September 2009 – April 2010	Instructor: *Bureau of Autism Services 2-day training on Functional Behavior Assessment and Treatment Plan Development for Service Providers*, Blue Bell, Bethlehem, and Scranton, PA.
February 2009	Presenter: *Overview of current research models of community-based and college campus-based transition programs.* Presentation given to the Carbon-Lehigh Transition Coordinating Council, Carbon Lehigh Intermediate Unit 21, Schnecksville, PA.
Fall 2006 and Spring 2007	Instructor: *Systematic instruction, data collection, and graphing for support staff working with individuals with intellectual disabilities in home and community settings*, Lehigh University.

PUBLICATIONS

Papay, C. K., & Bambara, L. M. (2011). Postsecondary education for transition-age students with intellectual and other developmental disabilities: A national survey. *Education and Training in Developmental Disabilities, 46,* 78-93.

Jitendra, A. K., Burgess, C. K., & Gajria, M. (2011). Improving expository text comprehension of students with learning disabilities using cognitive strategy instruction: The quality of evidence. *Exceptional Children, 77,* 135-159.

CONFERENCE PRESENTATIONS

Papay, C. K., & Bambara, L. M (2010). A national perspective on transition of youth with intellectual disabilities using the National Longitudinal Transition Study-2: Preliminary findings. Paper presented at the TASH 2010 conference, Denver, CO.

Jitendra, A. K., Burgess, C. K., & Gajria, M. (2010, April). Teaching students with learning disabilities expository text comprehension using cognitive strategy instruction: The quality of evidence. Paper presented at the American Educational Research Association 2010 Annual Meeting, Denver, CO.

Jitendra, A. K., Gajria, M., & Burgess, C. K. (2010, February). *Is cognitive strategy instruction for teaching expository text comprehension an evidence-based practice?* Poster presented at the 18th Annual Pacific Coast Research Conference, Coronado, CA.

Jitendra, A. K., Gajria, M., & Burgess, C. K. (2010, January). *Is cognitive strategy instruction for teaching expository text comprehension an evidence-based practice?* Poster presented at the International Academy for Research in Learning Disabilities 34th Annual Conference, Miami, FL.

Bambara, L., Burgess, C., Cole, C., Kunsch, C., & McCurdy, E. (2009, November). *Community inclusion of adults with autism: What do we know from research?* Paper presented at the TASH 2009 conference, Pittsburgh, PA.

Burgess, C. K., & Bambara, L. M. (2009, October). *Postsecondary education for transition-age students with intellectual and other developmental disabilities: A national survey.* Poster presented at the Council for Exceptional Children's Division on Career Development and Transition 15th International Conference, Savannah, GA.

Burgess, C. K., Jitendra, A. K., & Gajria, M. (2009, April). *Is cognitive strategy instruction an evidence-based practice for students with learning disabilities?* Poster presented at the Council for Exceptional Children 2009 Convention and Expo, Seattle, WA.

Burgess, C. K., & Bambara, L. M. (2008, December). College-based programs for transition-age students with intellectual disabilities: National survey results. Paper presented at the TASH 2008 conference, Nashville, TN.