Comparing the Transition Planning, Postsecondary Education, and Employment Outcomes of Students With Intellectual and Other Disabilities

Meg Grigal¹, Debra Hart¹, and Alberto Migliore¹

Abstract
This article describes a secondary analysis of variables from the National Longitudinal Transition Survey 2 (NLTS-2) database. Specifically, students with intellectual disability (ID) were compared to students with other disabilities regarding postschool transition goals listed on their IEPs/Transition Plans, contacts/referrals made to outside agencies during transition planning, participation of other agencies/organizations in transition planning (e.g., vocational rehabilitation and higher education representatives), and students’ postsecondary education and employment outcomes. Students with ID were less likely to have postsecondary education or competitive employment goals and outcomes and more likely to have sheltered and supported employment goals and outcomes compared to students with other disabilities. Contacts with and participation of external professionals in IEP/Transition Plan meetings also differed between the two groups of students.

Keywords
Intellectual disability, transition planning, NLTS-2, postsecondary education, competitive employment

Students with intellectual disabilities (ID) have been receiving IDEA-mandated transition services along with their counterparts with other disabilities for 20 years. Transition planning requires Individualized Education Plans (IEPs) to include appropriate measurable postschool goals based on age-appropriate transition assessments related to education and training, employment, and where appropriate, independent living skills to facilitate the student’s movement from school to postschool adult life (IDEA, 2004). This results-oriented approach emphasizes the importance of connecting transition planning activities to employment and postsecondary education (PSE) outcomes for all students with disabilities, including those with ID.

Recently, there has been an increase in students with disabilities attending college or receiving some level of PSE after high school. Between 1990 and 2005, there was a 19% increase in students with disabilities attending college or receiving some level of postsecondary education (PSE) within 4 years of leaving high school (Newman, Wagner, Cameto, Knokey, & Shaver, 2010). Like their counterparts with other disabilities, there has also been an increase in college attendance for students with ID (Blumberg, Carroll, & Petroff, 2008; Grigal & Hart, 2010)—although at a significantly lower rate than the general disability population. Newman et al. (2010) reported that in 1990, 8% of students with ID—previously labeled mental retardation—reported ever having enrolled in a postsecondary program, and in 2005, 28% reported such enrollment. Even with this increase, students with ID are the least likely to be enrolled “steadily” in college (Newman, Wagner, Cameto, & Knokey, 2009).

PSE experiences have been correlated with increased wages and job opportunities (Carnevale & Derochers, 2003; Marcotte, Bailey, Borkoski, & Kienzl, 2005; Prince & Jenkins, 2005). Given this, it is not surprising that some parents have expressed a desire for PSE to be listed as a goal on their student’s transition plan (Dwyre, Grigal, & Fialka, 2010; Grigal & Neubert, 2004). However, inconsistencies exist between parent and teacher perceptions of PSE as an option for students with ID. In a survey of 108 family members of transition-aged students with ID, Griffin, McMillan, and Hodapp (2010) found that parents felt that

¹Univeristy of Massachusetts–Boston, Boston, Massachusetts, USA

Corresponding Author:
Meg Grigal, ICI, UMASS Boston, 100 Morrissey Blvd, Boston, MA 02125
Email: meg.grigal@umb.edu
PSE would help their child transition to adulthood but that educators were perceived as less encouraging of students with ID to pursue PSE options. One barrier to understanding PSE options identified by 73% of parent respondents was a lack of general information or guidance from their schools related to PSE.

Although the PSE options for students with ID have been growing (Gaumer, Morningstar, & Clark, 2004; Hart, Grigal, Sax, Martinez, & Will, 2006), secondary transition personnel may not be aware of the currently available PSE programs for secondary students with ID. A recent national survey had 149 existing PSE program respondents serving students with ID in 37 states. Of these, 65% indicated that they served dually enrolled students: students with ID between the ages of 18 and 21 who were still receiving transition services under IDEA. These programs varied considerably in terms of level of student integration, access to typical college courses, focus on paid employment, and use of disability services (Hart, Grigal, & Weir, 2010b).

Amendments in the Higher Education Opportunities Act (HEOA) of 2008 address the issue of high variability of services by providing a definition of a comprehensive transition and PSE program for students with ID. HEOA also authorized funding for a model demonstration program for the development and expansion of PSE programs. In 2010, 27 model demonstration projects were funded to institutes of higher education in 24 states to implement such services in collaboration with local education agencies (LEAs).

Collaborative models of transition practice (Certo et al., 2008; Noonan, Morningstar, & Gaumer Erickson, 2008; Repetto, Webb, Garvan, & Washington, 2002) as well as national standards and guidelines have been created to organize and support the development, implementation, and research on transition services (e.g., the National Standards and Quality Indicators Transition Toolkit, from the National Alliance for Secondary Education and Transition Standards [NASET, 2005]; Transition Guideposts, from the National Collaborative on Workforce and Disability [NCWD, 2008]; and Taxonomy for Transition Planning [Kohler, 1996]). More recent federal requirements have increased the level of accountability LEAs have regarding transition services and outcomes for all students with disabilities. To comply with Indicator 14 of the State Performance Plans, states must identify the percentage of youth who are no longer in secondary school, had IEPs in effect at the time they left school, and were (a) enrolled in higher education within 1 year of leaving high school, (b) enrolled in higher education or competitively employed within 1 year of leaving high school, and (c) enrolled in higher education or in some other PSE or training, or competitively employed or in some other employment within 1 year of leaving high school.

These models, standards, and requirements emphasize the need for high-quality transition services for all students with disabilities that have been consistently equated with several elements:

1. high expectations (Kramer & Blacher, 2001; National Center on Secondary Education and Transition, 2004; Thoma, 1999; Wagner, Newman, Cameto, Levine, & Marder, 2007),
2. person-centered or student-directed goals that support postschool employment or education outcomes (Agran & Hughes, 2008; Benz, Lindstrom, & Yovonoff, 2000; Thoma & Wehman, 2010; Wehmeyer, Agron, & Hughes, 2000), and
3. practices that reflect collaboration with external partners, community agencies, and organizations that might be involved in supporting students in their postschool environments (Noonan et al., 2008; Repetto et al., 2002; Wehman, 2010).

Expectations of those participating in the transition planning for a student with a disability may be influenced by the type and severity of a child’s disability (Kraemer & Blacher, 2001; Newman, 2005) that may then direct the trajectory of the student’s secondary school experience. Newman (2005) identified differences between parents’ expectation for their child’s future educational attainment and independence based on the child’s disability. Parents’ expectations for attaining a high school diploma and pursuing PSE were higher for youth with speech/language or hearing and visual impairments than for other disabilities. Youth with ID, autism, or multiple disabilities were the least likely to be expected to graduate from high school with a regular diploma or to attend postschool education in 24 states to implement such services in collaboration with local education agencies (LEAs).

Postsecondary expectations and goals related to employment and PSE guide the activities reflected in the student’s IEP goals (Test, Aspel, & Everson, 2006). Higher expectations for academic and career success have been found to relate to better high school completion rates and higher postsecondary school attendance rates (Wagner et al., 2007) and more positive parent engagement while in high school (Newman, 2005). From 62% to 70% of youth with intellectual, autism, or multiple disabilities were not expected to pursue education or multiple employment after high school, and even higher percentages are thought unlikely to graduate from technical, 2-year, or 4-year postsecondary schools. Parents’ expectations also affect youths’ expectations for themselves in that youth who hold higher expectations tend to have parents who hold higher expectations for them (Newman, 2005).

Identification of desired postschool outcomes also determines the extent to which partners may be identified to participate in transition planning meetings or contacted for
the extent to which these transition planning experiences and postsecondary educational outcomes predicted the two groups of students’ employment outcomes was examined.

Method

The NLTS2 Data Set

The design of this research study was secondary data analysis using the NLTS2 data set. The NLTS2 data set includes data from a nationally representative sample of more than 11,000 students with any disability who received special education services and who were between the ages of 13 and 16 in December 2000. About 10,000 variables are included in the data set to describe characteristics of these students and their households, school experiences, extracurricular activities, post–high school experiences, and transition outcomes in the domains of education, employment, leisure, and residential between 2000 and 2009.

Information was collected from multiple sources at multiple points in time—waves. Parents/guardians were surveyed five times, every 2 years; youth were surveyed four times, every 2 years; staff and teachers in schools were surveyed two times during the first half of the implementation of the study; students were assessed once during the first part of the study; and school characteristics were surveyed at the onset of the study.

Participants

Participants in NLTS2 were students identified with support from LEAs and, to a lesser extent, from state-supported special schools serving students with hearing and vision impairments. A stratified random sample of 3,630 LEAs was selected from the universe of 12,000 LEAs operating in the United States and 70 state-supported special schools were contacted. A total of 500 LEAs and 30 special schools agreed to participate, yielding a total of more than 11,000 students eligible for the study. Figures are rounded in compliance with data security standards.

Response rates varied based on the sources of data and the wave of data collection. Parents/youth response rates ranged from 82.1% in Wave 1 to 50.1% in Wave 4. More information about the NLTS2 research design and participants is available from www.nltss2.org.

This article focuses on more than 520 students with ID as identified by school districts. The terminology used by school districts is in fact mental retardation, but in this article, we use the more recent term of ID adopted for this population. This group included 9.4% of the total student population in the Wave 4 data. The comparison group used in this secondary analysis, students with other disabilities, included people with autism, deafness and blindness, emotional disturbance

post–high school referrals. Accordingly, transition planning teams should include, in addition to the student, his or her family, and school personnel, representatives from agencies that provide post–high school services to students with disabilities including vocational rehabilitation (VR), mental health agencies, developmental disability (DD) providers, and independent living centers (deFur, 2005; Schutz, 2002).

To determine the extent to which these elements are reflected in practice, Katsiyannis, Zhan, Woodruff, and Dixon (2005) conducted a secondary analysis of the National Longitudinal Transition Survey-2 (NLTS2) data comparing the transition experiences of students with ID—previously labeled mental retardation—with those of students with learning disabilities and emotional or behavioral disorders. These authors found that the IEP/transition goals related to employment for students with ID focused more on sheltered and supported employment than for the other groups. The authors also determined that involvement of certain external professionals such as VR counselors and other agencies was higher for students with ID than the other two groups of students, but overall VR participation was very low. Katsiyannis et al. (2005) did not report the level of involvement of PSE personnel, nor did they determine if there were any statistically significant differences between the groups of students. As their findings were based on Wave 1 of the NLTS2 data, no student outcome information was available to be reported.

However, others have documented that postschool outcomes for students with ID have shown very little improvement over time (Hart et al., 2006; Test et al., 2006). Employment studies of postschool outcomes for young adults with ID continue to show high levels of unemployment and underemployment (Braddock, Hemp, & Rizzolo, 2008; Butterworth, Smith, Hall, Migliore, & Winsor, 2009; Migliore & Butterworth, 2008b; Simonsen, 2010; Weathers & Wittenburg, 2009). Students with ID are also the least likely to be enrolled “steadily” in college (Newman et al., 2009). The lack of positive outcome data for students with ID led us to ask, To what extent do the goals on transition plans for students with ID reflect high expectations by anticipating outcomes such as competitive employment and PSE? And is this planning different in a significant way from transition planning provided to students with other disabilities? Is there a relationship between the transition planning, educational, and employment outcomes for these two groups of students? To address these questions, we sought to expand on the work of Katsiyannis et al. (2005) by conducting a secondary analysis of NLTS2 data to compare transition planning experiences and postschool outcomes of students with ID with the general population of students with disabilities related to the following variables: postschool transition goals, contacts with outside agencies, and external professional participation in transition planning. We also compared student PSE and employment outcomes. Finally,
or behavior disorder, hearing impairment/hard of hearing, learning disability/learning handicap, multiple disabilities, health impairment, physical or orthopedic impairment, speech impairment, specific learning disability only, traumatic brain injury, and visual impairment.

**Data Analysis**

To answer the research questions, preliminary data preparation was performed and variables were recoded to include responses from multiple waves. For instance, the variable describing whether competitive employment was a post–high school goal was recoded to include responses provided during both the Wave 1 and Wave 2 of data collection, the two waves when this question was asked. Employment was defined as “Youth had ever worked for pay since leaving high school,” and PSE was defined as “Youth had ever attended a vocational/technical school since leaving high school” (or 2-year community college or 4-year community college). Descriptive analyses of all predictors (e.g., gender, race, PSE) and employment outcomes were performed by computing frequencies and cross-tabulation. To test the correlation between an employment outcome and the predictors, we focused on the differences in the predictors’ values across the following two groups: youth who worked at some point after high school and youth who never worked after high school. For example, to test the correlation between employment and transition planning that included the post–high school goal of employment, we compared the percentage of youth—from among the youth who worked at some point after high school—who had this goal with the corresponding percentage of youth who never worked after high school. If the two figures were statistically significantly different, we concluded that working after high school was correlated with transition planning that included the post–high school goal of employment.

To assess the magnitude of the differences, we used the Cohen (1988) effect size \( h \). Cohen effect sizes are classified as small for \( h \) between .20 and .50, medium for \( h \) between .50 and .80, and large for \( h \) over .80. To assess the statistical significance of these differences, we used a test of significance based on a binomial distribution. The \( p \) value for all pairs was obtained by dividing the squared difference of the percentages by the sum of the squared standard errors. The value obtained was compared with a chi-square type of distribution with 1 degree of freedom to determine the actual statistical significance. This method of analysis was recommended by the researchers who developed and managed the NLTS2 project (Newman et al., 2009).

Because of the limited sample size, logistic regression could not be conducted. All analyses were performed after applying weights for estimating the national figures and standard errors of measures (SEM). Estimates were reported only when based on a sample of at least 30 cases, a minimum recommended for reliable estimation. Finally, in compliance with The Institute of Education Sciences (IES)’s guidelines for protecting the confidentiality of participants, unweighted data were not reported. Data analysis was conducted using SPSS (Version 17) complex samples.

**Results**

This section is organized in four parts: participants’ demographics, transition planning characteristics, postschool outcomes, and predictors of employment outcomes.

**Demographics**

The majority of students with ID were male (58%), and the majority were White (54%). The sample of students with other disabilities was similar, with 66% being male and 62% White. Youth ranged in age from 19 to 23 years old at the time of the fourth wave of data collection in 2006-2007. The percentage of African American students was greater within the group of students with ID (32%) compared to the group of students with other disabilities (16%; \( p \leq .001 \)). In contrast, students who were of Hispanic descent were less prevalent among those with ID (11%) compared to students with other types of disabilities (20%; \( p \leq .001 \)).

**Transition Planning Characteristics**

**Post–high school goals.** As indicated in Table 1, the most frequently reported goal on students with ID’s IEP was to prepare for independent living (50%) followed by competitive employment (46%), supported employment (45%), sheltered employment (33%), postsecondary vocational training (25%), and 2 or 4 years of college (11%). Statistically significant differences were found between students with ID and students with any other type of disability in the frequency of goals related to PSE and employment. The transition goal of attending a 2- or 4-year college was reported less often for students with ID than for students with other types of disability (11% vs. 58%; \( p \leq .001 \)). In contrast, supported employment was reported as a transition goal more frequently for students with ID compared to students with other disabilities (45% vs. 7%; \( p \leq .001 \)). Finally, transition planning for students with ID was more likely to include the goal of sheltered employment (33% vs. 8%; \( p \leq .001 \)) and less likely to include the goals of postsecondary vocational training (25% vs. 46%, \( p \leq .001 \)) and competitive employment (46% and 60%; \( p \leq .005 \)) compared to students with other types of disabilities.

**Contacts with external programs.** As seen in Table 1, the external program most often contacted for students with ID was the state VR agency. For 62% of students with ID, the
school system contacted the VR agency for postschool services. Other school contacts for students with ID included job placement programs (47%), supported employment programs (46%), other vocational training programs (43%), potential employers (42%), sheltered workshops (35%), adult day programs (33%), and postsecondary vocational schools (32%) and colleges (19%).

Significant differences were found between the two groups of students in terms of the school system contacting the following types of external programs: supported employment programs, sheltered workshop programs, and adult day programs. All of these types of programs were contacted more often in the case of students with ID (46%, 35%, and 33%, respectively) compared to students with other disabilities (11%, 10%, and 4%, respectively). Effect sizes of these differences ranged from medium to large, with \( p \leq .001 \).

Similarly, job placement agencies and state VR agencies were contacted more often in the case of students with ID (47% and 62%, respectively) than in the case of their peers with other disabilities (27% and 43%, respectively), but the effect sizes were smaller. Finally, colleges were contacted less often in the case of students with ID than in the case of their peers with other disabilities (11% vs. 58%; \( p \leq .001 \)).

No statistically significant differences were found in regard to contacting postsecondary vocational schools, other vocational training programs, or employers.

### Participation of professionals in transition planning

Table 1 shows participation in transition planning of four categories of professionals chosen because they were considered critical for transition planning that involves PSE and employment outcomes: school counselor or psychologists, VR counselors, staff of other agencies, and representatives of institutes of higher education. No differences were found in the level of participation of VR based on student disability. Staff from other agencies participated in the transition planning of students with ID significantly more often than in the transition planning for students with other disabilities (16% vs. 8%; \( p \leq .05 \)), whereas school counselors or psychologists participated less often in the transition planning of students with ID (60% vs. 78%; \( p \leq .01 \)). Representatives from PSE rarely participated in either student group’s transition planning.

### Post–High School Outcomes

The PSE and employment outcomes of both student groups after leaving high school are presented in Table 2. Students with ID attained significantly less positive education and employment outcomes than did students with other types of disabilities. For instance, 46% of students with ID were employed at the time they completed the survey compared to 74% of students with other disabilities (\( p \leq .001 \)).
In addition, only 30% of students with ID attended PSE compared to 56% of students with other disabilities ($p \leq .001$). Whereas 77% of the students with ID who worked were earning more than a minimum wage, 96% of students with other disabilities were earning more than a minimum wage ($p \leq .01$). Students with ID were also less likely to have worked at some point after high school or have attended either a vocational school, 2-year college, or 4-year college compared to their peers with other disabilities ($p \leq .001$), but the effect size of the differences was smaller.

### Predictors of Employment Outcomes

The relationships between the predictors and the employment outcomes of both student groups are shown in Table 3.

#### Postschool goals

The postschool transition goal of attending a 2- or 4-year college was the only predictor associated with a greater likelihood of employment for students with ID ($p \leq .001$). There were not sufficient cases to estimate the significance of the other postschool goals (competitive employment, sheltered employment, supported employment, and independent living) as predictors. In the case of students with other types of disabilities, the postschool transition goal of sheltered employment was the only variable associated with employment, predicting a lower likelihood of attaining an employment outcome ($p \leq .001$).

#### Contacts with external programs

No statistically significant relationship was found between contacting job placement agencies (the only predictor for which sufficient data were available) and the employment outcomes of students with ID. More data were available regarding students with other types of disabilities, however only one type of external contact, contacting adult day programs, was associated with an employment outcome. Specifically, youth who worked for pay after high school were less likely to have had their high school personnel contact adult day programs ($p \leq .05$).

#### Educational outcomes

Having ever attended PSE, including a 2-year or a 4-year college, was associated with a greater likelihood of employment for students with ID ($p \leq .05$), but this relationship was not evident for students with other types of disabilities.

#### Demographics

No statistically significant relationships were found between demographics—gender and race—and employment outcomes relative to students with ID. In the case of students with other types of disabilities, it was noted that White students were more likely to be employed than students of other races ($p \leq .05$).

### Discussion

This secondary data analysis used the NLTS2 database to compare and contrast key transition variables for youth with ID and all other disability groups including their postschool goals, contacts made with external programs, and participation of external personnel in transition planning. Comparison of PSE and employment outcomes was made for both groups as well.

### Transition Planning Characteristics

#### Post–high school transition goals

Overall, the post–high school transition goals of students with ID and students with other disabilities were found to differ significantly (see Table 1). Three variables in particular showed a large effect size between the two student groups; PSE, supported employment, and sheltered employment. Students with ID (11.5%) were significantly less likely to have “attending 2-or 4-year college” listed as a postschool IEP / transition goal.
Table 3. Predictors of Employment Outcomes

<table>
<thead>
<tr>
<th>Post–high school goals</th>
<th>Intellectual Disabilities</th>
<th>Other Types of Disabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ever Employed</td>
<td>%</td>
</tr>
<tr>
<td>Two or four-year college</td>
<td>Ever Employed</td>
<td>15%</td>
</tr>
<tr>
<td>Postsecondary vocational training</td>
<td>27%</td>
<td>5%</td>
</tr>
<tr>
<td>Competitive employment</td>
<td>63%</td>
<td>6%</td>
</tr>
<tr>
<td>Sheltered employment</td>
<td>24%</td>
<td>6%</td>
</tr>
<tr>
<td>Supported employment</td>
<td>41%</td>
<td>6%</td>
</tr>
<tr>
<td>Independent living</td>
<td>59%</td>
<td>7%</td>
</tr>
<tr>
<td>Contacts with external programs</td>
<td>State vocational rehabilitation agency</td>
<td>74%</td>
</tr>
<tr>
<td>Other vocational training programs</td>
<td>51%</td>
<td>8%</td>
</tr>
<tr>
<td>Employers</td>
<td>47%</td>
<td>8%</td>
</tr>
<tr>
<td>Job placement agencies</td>
<td>53%</td>
<td>8%</td>
</tr>
<tr>
<td>Supported employment programs</td>
<td>47%</td>
<td>8%</td>
</tr>
<tr>
<td>Sheltered workshops</td>
<td>36%</td>
<td>8%</td>
</tr>
<tr>
<td>Adult day programs</td>
<td>33%</td>
<td>8%</td>
</tr>
<tr>
<td>Professional participating in transition planning</td>
<td>Vocational rehabilitation counselor</td>
<td>34%</td>
</tr>
<tr>
<td>Educational outcomes</td>
<td>Ever attended postsecondary</td>
<td>33%</td>
</tr>
<tr>
<td>Employers</td>
<td>19%</td>
<td>4%</td>
</tr>
<tr>
<td>Ever attended a 2-year/community college</td>
<td>26%</td>
<td>4%</td>
</tr>
<tr>
<td>Ever attended a 4-year college/university</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>Demographics</td>
<td>Gender (female)</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>Race or ethnicity (White)</td>
<td>60%</td>
</tr>
</tbody>
</table>

Note. Effect size $S = $ small; $M = $ medium; $L = $ large.

$p \leq 0.05$, $**p \leq 0.001$. 
goal compared to students with other disabilities (58.1%). Katsiyannis et al. (2005) found a similar discrepancy when comparing students with ID to those with LD and ED. This is not surprising since the literature has consistently shown that students with ID are among the least likely to have a PSE (Grigal & Hart, 2010; Newman et al., 2009).

The goals of supported employment (45.3% vs. 7.4%) and sheltered employment (33.2% vs. 7.6%) were also significantly more prevalent for students with ID than for students with other disabilities. Setting supported employment as a goal for students with ID could be interpreted as a positive finding, as the term supported employment is defined in the Rehabilitation Act Amendments (subsumed in the Workforce Investment Act of 1998) as:

competitive work in integrated work settings, or employment in integrated work settings in which individuals are working toward competitive work, consistent with the strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice of the individuals, for individuals with the most significant disabilities. (Workforce Investment Act, 1998, p. 1109)

However, the outcomes associated with a goal of supported employment may be much less integrated than this definition would imply and may not necessarily translate into competitive work or wages. Butterworth et al. (2009) reported rates of integrated employment for adults with DD receiving services from Community Rehabilitation Providers varied widely, with some states reporting as few as 4% in integrated placements. In a recent study of postschool employment outcomes for high school graduates with DD (including ID) receiving long-term supports, Simonsen (2010) found that only 39.9% of 338 graduates were engaged in paid work 1 year after exiting high school. Of those who worked, only 14.2% were employed in individual positions and paid minimum wage. The remaining individuals were engaged in supported employment in enclaves or mobile work crews and received subminimum wages.

Contacts made in transition planning for the student. Overall, school systems were more likely to contact external agencies regarding postschool services for students with ID than for students with other disabilities, with the exception of contacts with colleges. Colleges were contacted more frequently for students with other disabilities than for students with ID. This is not surprising as the group with other disabilities included students with mental, emotional and psychiatric, and learning disabilities, which compose the largest percentage of students with disabilities attending college (United States Government Accountability Office, 2010). Contact with external programs for students with ID corresponded with their transition goals. Students with ID were significantly more likely to have adult day programs contacted compared to students with other disabilities. Additionally, students with ID had supported and sheltered employment programs contacted much more frequently than students with other disabilities.

For the majority of students with ID (68.6%), school systems contacted adult day programs or sheltered workshops, which presumably would not offer supported or competitive employment to any great extent for a majority of its consumers. These findings demonstrate that prior to exiting high school a large percentage of students with ID have been relegated to outcomes that are nonwork segregated placements and have little to no chance of becoming better employed or more integrated after they enter them (Bellamy, Rhodes, & Albin, 1986). Unfortunately, participation in community-based nonwork services has grown steadily from 12.5% in FY 1996 to 31% in FY 2007 for states that report it as a service (Butterworth, Smith, Hall, Migliore, & Winsor, 2008). This could be due to the fact that states’ investment continues to emphasize growth in facility-based and nonwork services (Winsor & Butterworth, 2007).

Participants in transition planning. As shown in Table 1, no significant difference was found between the two student groups regarding the participation of VR counselors in transition planning. However, neither group had high levels of VR participation. When compared to the number of students for whom VR was contacted, it appears that for students with ID, VR involvement occurred in 32% of the cases, whereas students with other disabilities had slightly less participation of VR (23.9%) than their counterparts with ID. It does appear that the level of contact with VR was higher than the level of VR participation in transition planning for both student groups.

Although collaboration with VR is consistently called for in transition planning (Oertle & Trach, 2007; Wehman, 2006), high levels of collaboration with VR providers have not consistently been reported (Grigal, Test, Beattie, & Wood, 1997; Noonan et al., 2008). Agran, Cain, and Cavin (2002) demonstrated that rehabilitation counselors are infrequently invited to serve as members of transition teams and in many cases not contacted at all. The present findings appear to support those of Agran and his colleagues. This is disheartening considering that Rabren, Dunn, and Chambers (2002) found it to be one variable predictive of adult employment with assistance by VR.

VR involvement demonstrates a commitment to collaboration with adult agency personnel and an emphasis on employment in transition planning and can link individuals to valuable community and workplace resources (Wehman & Targett, 2002). Hayward and Schmidt-Davis (2000) found receiving specific VR services was strongly associated with employment outcomes such as youth being less likely to utilize financial assistance (e.g., SSI), demonstrating higher levels of self-esteem, and having more internally based locus of control.
In addition, VR support of PSE for students with disabilities (in general) and for students with ID has been shown to enhance competitive employment outcomes and increase earnings (Migliore & Butterworth, 2008a; National Council on Disability, 2000). The NLTS2 data set does not identify the extent to which VR supported access to PSE for either student population in the present study.

The involvement of higher education representatives in transition planning for both groups of students was also extremely low. This low level of participation is an issue that may be reflective of a larger problem, the lack of coordination and communication between K-12 and higher education personnel. Significant gaps exist between what is expected of students to succeed in high school and what is expected of students to succeed in college (Achieve, 2007). The expectation gap between K-12 and higher education sectors hinders many students’ smooth transition from high school into college and decreases their chances of being adequately prepared for the rigor of higher education (Achieve, 2007; McDonnell, McLaughlin, & Morrison, 1997; Venezia, Kirst, & Antonio, 2003). Academic standards for high school students often do not reflect college admissions and placement requirements, and students with and without disabilities get conflicting signals from high schools and colleges about what constitutes adequate preparation. Faculty estimates that 42% of their students are not adequately prepared (Achieve, 2007).

This expectations gap and lack of collaboration is made all the more challenging when we add the element of disability, in particular students with disability labels such as ID, for whom college is seldom promoted as a viable transition outcome. Involving higher education personnel in transition planning would offer a unique opportunity to prepare both the student and their family, the college, and potential support staff to know what types of accommodations are available at the college and which are not and might need to be provided through an outside agency or addressed privately by the family (Dutta, Kundu, & Schiro-Geist, 2009). Discussion of such anticipated service needs also allows families to prepare for any additional costs that may be involved (Smith, 2007).

Increased collaboration between secondary and higher education institutions might also affect students’ and families’ understanding and student use of existing college disability services. Hart, Grigal, and Weir (2010a) found that 58% of the respondents to their national survey of PSE programs indicated that students with ID received services from the college’s disability office. Therefore, not all IHEs that are supporting students with ID are doing so in collaboration with the disability services office. The Association on Higher Education and Disability (AHEAD) has created a set of Professional Standards and Performance Indicators for disability services in higher education that indicate essential expectations for all postsecondary institutions in terms of minimum supports that must be available to provide equal access for students with disabilities (Shaw & Dukes, 2006). As more students with ID begin to access PSE, the role the Disability Services Office (DSO) will play in the provision of accommodations will need to be defined and communicated to transitioning youth and their families and K-12 personnel.

Education and Employment Outcomes

Overall, students with other disabilities had significantly more positive outcomes than did students with ID. About 30% of students with ID were reported to have attended PSE mostly in either a vocational technical school or a 2-year college, whereas 56% of students with other disabilities had attended some form of higher education. The difference between PSE outcomes for students with ID and all other groups may be attributed to the fact that students’ goals are driving the outcomes. If attending any type of higher education is seldom, if never, listed as a goal on a student’s transition plan, it is doubtful that the outcome will ever occur. This demonstrates the impact expectations may have on student outcomes (McGrew & Evans, 2004).

Students with ID are often presumed not to have skills and abilities needed to access or benefit from attending college. However, parents of transitioning youth who have sought to include such goals related to accessing college on the child’s IEP have been faced with resistance and, in some cases, ridicule (Dwyre et al., 2010). Students with and without disabilities and their adult counterparts have consistently demonstrated that further education correlates with successful employment or career outcomes (Wehman & Yasuda, 2005). Individuals with disabilities who have had any PSE are employed at double the rate of those with just a high school diploma (Gilmore, Bose, & Hart, 2001) and PSE access by students with ID has been shown to enhance competitive employment outcomes and increase earnings (Migliore & Butterworth, 2008a). Therefore, it seems logical that most, if not all, students regardless of their disability would be best served by including a goal of accessing further education. The present findings demonstrate that this is not the case.

The employment findings also demonstrate more positive outcomes for students with other disabilities. Seventy-one percent of students with ID and 90% of students with other disabilities had a paid job since high school. However, these figures reflect any paid work during the past 2 years (other than around the house) and this work could include sheltered work experiences. Therefore, we cannot presume that those who had a paid job since high school were working in integrated settings or in supported or competitive employment situations earning a minimum or living wage. One positive finding was that of those students with ID who were currently working, 77% were earning more than the federal minimum wage. However, more than half of the students with ID (54%) were not working, and 29% had never worked since high school.
Predictors of Employment

The only post–high school transition goal that was a predictor of employment for students with ID was having the goal of attending a 2- or 4-year college. This finding supports the connection between PSE and employment identified by Migliore and Butterworth (2008a), who found that youth with ID who participated in PSE and successfully completed a nondegree program, associate degree, vocational/technical certificate, bachelor’s degree, or graduate degree program were 26% more likely than youth with ID who did not participate in PSE to exit their VR program with employment and earned a 73% higher weekly income. Although the current findings demonstrate a positive connection between PSE and employment, they also demonstrate the low percentage of students with ID for whom a 2- or 4-year college was considered a possible outcome. These percentages may increase as PSE options become more prevalent throughout the country.

Currently, there are a variety of programs serving students with ID in the United States, and these numbers are increasing (Gaumer et al., 2004; Hart et al., 2010a). Some of the programs serve transition youth between the ages of 18 and 21 and others serve adults. With the passage of the HEOA of 2008, students with ID will also have access to 27 new “Transition Postsecondary Education for Students With Intellectual Disabilities” programs funded through the Office of Postsecondary Education (Duncan, 2010).

The remaining predictors of employment for students with ID were the educational outcomes of PSE in particular if the students attended a 2- or 4-year college, which was associated with a greater likelihood of employment. This connection lends credence to the emerging connection between PSE and employment for this student population. But it also requires a more critical examination of the factors that affected the students’ attendance in college, including their academic skills and preparation, the nature of their college experience, and the quality of their employment outcomes.

Of the postsecondary transition goals for students with other disabilities, only the goal of sheltered employment was found to be a negative predictor of employment status. Therefore, students who were employed were less likely to have had sheltered workshops as a goal than those who were never employed. It is unfortunate that we were unable to determine (due to the low numbers of students) if the opposite was true for students with ID, as sheltered employment was a more prevalent goal for this student group. The strongest predictor of employment for students with other disabilities was race. Of students who had been in paid work in the past 2 years, 67% were White, whereas of those who were never employed, only 40% of the students were White. Race/ethnicity was found to have a strong relationship to the likelihood of employment for youth with disabilities by Wagner et al. (2007), who demonstrated that African American youth were less likely to be employed than White youth. Others have made connections between race and its impact on VR evaluation and services accessed by people with disabilities (Rosenthal, 2004; Rosenthal, Chan, Wong, Kundu, & Dutta, 2005; Wilson, 2000). The currently findings suggest that this issue continues to be worthy of further correlational research to determine causal factors.

Limitations

This study was based on secondary analysis of the NLTS2 data and thus is governed by the same limitations of that study. Like those of Newman et al. (2009), the analysis in the present study is descriptive and should not be interpreted as implying causal relationships. The discussions in the report emphasize differences that reached a level of statistical significance of at least $p < .05$. Overall, the NLTS2 (Wave 4) data had a range of descriptive statistics about students with ID that is important to capture because there is minimal information on this age group. Finally, this analysis of key transition variables revealed that there were very low numbers of students. In fact, the number of students with ID who were in PSE and employment was rarely over 200 and often at 100 cases.

Implications for Research

Up until recently, transition services for students with ID have focused more on access to employment than PSE. The present findings demonstrate that transition goals related to employment reflect low expectations for students with ID to be competitively employed and these expectations may affect the players involved in creating and implementing transition services and the outcomes achieved. As the transition goals analyzed were from Wave 1 and Wave 2 of the NLTS2 data set, they may be reflective of the practices and services available 8 to 10 years ago. It is possible that a more current data set would depict a different picture. The NLTS2 also did not contain variables regarding student involvement in dual enrollment programs. Nor was it possible to discern the extent, if any, the students, families, or professionals who provided the data for NLTS2 were familiar with or had access to dual enrollment options. In the future, researchers who are looking to expand on the current NLTS2 data set may want to consider adding variables related to the existence of and enrollment in dual enrollment programs.

We know that people rise to the expectations that they and others have for themselves (McGrew & Evans, 2004). Overall, the findings from this analysis support this assertion. What is unclear is the extent to which these expectations are predetermined or affected by a student’s label, the
Currently available services in their communities, and the secondary education and transition professionals’ awareness and understanding of PSE options for students with ID. Therefore, another question that could be addressed by future researchers is, Does a student’s skill level and disability label, by necessity, limit them to goals such as sheltered employment and day habilitation? Or are these low expectations placed on them because of limitations in existing structures and available services that preclude access to more integrated options? Finally, further research is needed to identify the factors that affect the attendance, retention, and outcomes of students with ID accessing PSE, including their academic skills and preparation, the nature of their college experience, and the quality of their employment outcomes.

Implications for Practice

In their 2004 report, McGrew and Evans stated, “It is important that students with disabilities not be saddled with group-based stereotyped low academic expectations” (p. 4). The current findings would lead us to reiterate this sentiment and expand its scope to include postschool expectations. To improve employment and PSE outcomes, it is critical that students’ post–high school goals reflect an expectation for PSE and integrated paid employment regardless of their disability label. The findings from the present study support the need for changes in practice related to transition services and planning for students with ID. Although there is a national movement growing to create access to PSE for students with ID, it is possible that few transition coordinators, general and special educators, higher education personnel, personnel from adult service agencies, and students and families know about these options. Additional professional development is needed for secondary and transition personnel about the emerging models that support a successful postschool experience for students with ID (Grigal & Hart, 2010). As students with ID will now have the ability to access certain forms of non-loan-based financial aid to attend college, it will also be important for special and general educators, guidance counselors, and transition professionals to become familiar with the available options and requirements so that interested and eligible students with ID can access federal student aid. The following are additional recommendations for future practice:

1. Better prepare students with ID for a PSE by increasing access to academics, supporting the development and application of self-advocacy skills, and including goals related to further higher education in their IEP.
2. Increase collaboration between LEAs, VR Agencies, DD agencies, and Institutes of Higher Education in the transition planning process to ensure that all students with disabilities, including those with ID, are adequately prepared for transition to and supported in PSE and competitive employment outcomes.
3. Eliminate use of post–high school goals and referrals of students with ID (or any student) to segregated adult day services that are nonwork or sheltered workshops. States need to develop strategies, policies, and training to close this “pipeline” from high school into segregated nonwork services if new initiatives, such as “Employment First,” are ever to become a reality for students with ID.
4. Improve personnel preparation and professional development of professionals such as transition personnel, guidance counselors, higher education personnel, and rehabilitation counselors to ensure that those who are responsible for developing and supporting the transition goals related to PSE and employment implement state-of-the-art practices such as customized employment strategies (Luecking, 2009).
5. Ensure that reauthorization of IDEA 2004 and the Rehabilitation Act are aligned with the HEOA 2008 and include provisions that support increased access to integrated postschool employment and PSE options for students with all disabilities including students with ID.

Conclusion

Postschool outcomes for students with ID when compared to students with other disabilities are less than positive and far too frequently reflect low expectations for attending college or becoming competitively employed. In 1996, Gartin, Rumrill, and Serbreni stated:

Unfortunately the school to work transition approach has not yet been fully applied to the transition from public school special education services to institutes of higher education. Students with disabilities often encounter inadequate vocational rehabilitation services and universities and colleges are ill prepared to meet their transition needs. (p. 33)

Findings of the present study demonstrate that with the most recent and comprehensive transition data available, employment outcomes for students with ID are also less than ideal. If we are to ever hope for substantial and long-lasting changes in these outcomes, transition goals for students with disabilities, including those with ID, need to reflect the best of all possible outcomes.
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Note

1. All figures are rounded down to the closest decimal in compliance with the IES confidentiality requirements.

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Bios

Meg Grigal, PhD, is a senior research fellow at the Institute for Community Inclusion at UMASS Boston. Her current interests include transition, postsecondary education, and employment for students with intellectual and developmental disabilities.

Debra Hart, MS, is Director of Education and Transition at the Institute for Community Inclusion, at the University of Massachusetts. Her current focal area is on creating access to and support in postsecondary education for students with intellectual disability.

Alberto Migliore, PhD, is a research associate at the Institute for Community Inclusion, University of Massachusetts Boston. His interests include employment policies and practice for people with intellectual disability.