

Where Are They Now? Lessons from a Single District Follow-up Study

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Abstract

This study examined the post-secondary outcomes of students with and without disabilities in the four major outcomes areas of post-secondary education, employment, independent living, and recreation and leisure. The target population included students graduating from one mid-sized school district from a southern state. A stratified random sample of 228 students with and without disabilities was selected. Data were collected prior to graduation and six-months following graduation. Differences between groups were analyzed using loglinear analyses based upon educational setting, disability category, gender, ethnicity, and socio-economic status. The findings indicated that differences among groups did exist for post-secondary outcomes. Recommendations for collecting district-level follow-up information on school leavers with and without disabilities are discussed.

Do all students receive a public education that prepares them to be productive, contributing members of their communities? Regardless of the presence or absence of a disability, graduating from high school and transitioning to an adult lifestyle poses challenges. High schools across the United States struggle with ensuring that all students are prepared for this transition. However, for students with disabilities, this transition can be even more difficult. The 2004 amendments to the Individuals with Disabilities Education Act (P.L. 108-446) require states to collect post-school outcome data on high school leavers with disabilities. Local school districts will be key to collecting this information. This study identifies differences in post-school outcomes for high school graduates with and without disabilities as reflected in one large school district and discusses issues and recommendations for collecting local school district data.

Federal Initiatives Guiding High School Services

Currently, high school services for students with disabilities are guided by two federal initiatives: The Individuals with Disabilities Education Improvement Act (IDEA) Amendments of 2004 and The No Child Left Behind (NCLB) Act of 2001. The Individuals with Disabilities Education Improvement Act (IDEA) of 2004 mandates the provision of transition planning to all students receiving special education services beginning when students are 16 years of age. Transition services are a central component of special education at the secondary

level and, arguably the central component of public education in that the primary purpose of IDEA is "to ensure that all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for further education, employment and independent living" (Individuals with Disabilities Education Improvement Act of 2004, § 300.1, 2004).

However, high school students with disabilities receive instruction within the larger context of high school services for all students. No Child Left Behind (NCLB), the 2001 reauthorization to the Elementary and Secondary Education Act, requires all students to achieve at high standards and to pass high school level academic assessments. School districts are held accountable for the "adequate yearly progress" of all students, including students with disabilities. As a result, school personnel focus extensive energy helping students with disabilities prepare for and pass state standardized tests in core academic subjects, leaving little time for transition instruction and services.

Key Trends in Follow-up Studies

Follow-up studies have been conducted for over 50 years to collect post-school outcome information on students with disabilities. The process of collecting follow-up information has become more formalized over the past 20 years as a result of several key trends in follow-up research.

In 1984 the stage was set for transition services and the collection of follow-up information on students with disabilities when the Office of Special Education and Rehabilitative Services (OSERS) identified transition as a major federal priority in special education (Will, 1984). Grants were awarded to develop models for transition planning and services within high school and post-secondary settings and to examine post-school outcomes experienced by youth with disabilities. These early demonstration and follow-up studies provided initial contemporary information on the poor outcomes experienced by youth with disabilities, especially relative to their peers without disabilities (Hasazi, Gordon, and Roe, 1985; Mithaug, Horiuchi, and Fanning, 1985).

The creation of the National Longitudinal Transition Study (NLTS) in 1987 and the passage of IDEA in 1990 marked a new period in follow-up studies. Although follow-up information collected during the 1980s provided insight into the outcomes of students with disabilities, the need for a national perspective prompted the creation of the NLTS. The other fundamental change marking a new phase in follow-up studies occurred with the passage of IDEA and new transition requirements. The new governmental guidelines institutionalized the requirements and practices used in transition services, thus impacting post-secondary outcomes for students with disabilities.

In 1997, the U.S. Department of Education funded a second National Longitudinal Transition Study known as NLTS2 beginning the third and final phase of follow-up research. The impact of IDEA was not reflected through previous follow-up studies and new data were needed. Another fundamental

movement through this era included two reauthorizations of IDEA, the Amendments of 1997 (Public Law 107-17) and of 2004 (Public Law 108-446). Through the latest IDEA reauthorization, each state must develop a State Performance Plan to submit to the Office of Special Education Programs (OSEP) documenting the state's status on indicators within special education. Indicator 14 of the State Performance Plan on Effective Transition requires states to collect post-school outcome data to determine the "percent of youth who had Individual Education Plans, are no longer in secondary school and who have been competitively employed, enrolled in some type of post-secondary school, or both, within one year of leaving high school" (National Post-School Outcomes Center, 2006). Therefore, states are now required to begin collecting outcome data on high school leavers during the spring of 2006 and often states are deferring this responsibility to the district level.

Post-Secondary Outcomes

Research and legislation in special education consistently identifies four areas as the cornerstone of post-secondary success for students with disabilities: employment, post-secondary education, independent living, and recreation and leisure (National Transition Network, 1997; Wagner et al., 1991). Employment involves the ability of the individual to gain and maintain satisfying, paid work within the community where one resides. Employment is a fundamental part of being a contributing member of society. Current literature shows that school leavers with disabilities are not employed at the same rate as their non-disabled peers and in addition earn less income. Blackorby and Wagner (1996) demonstrated this trend by determining that two years follow-

ing high school, students with disabilities are employed at a rate of 46% compared to 59% of youth in the general population. Three to five years after high school the percentage of youth showing employment increased, but this trend occurred for the general population of youth as well (57% vs. 69%, respectively). Promising results have been seen in recent studies where up to 60% of parents report their children who received special education services have employment (Cameto, Marder, Wagner, & Cardoso, 2003).

In addition to gaining meaningful employment, access to post-secondary education has emerged as a major component of adult success. In the decade from 1985 to 1995, the number of students with disabilities attending post-secondary education doubled from 15% to 32% (Barr, Harttnan & Spillane, 1995). A survey completed in 2003 showed that slightly less than half of youth with disabilities were attending post-secondary education when compared to their general education counterpart (19% vs 40%) (Newman, 2005).

Independent living is an important part of adult life. The concept of independent living involves more than having one's own address, it is a philosophy enveloped in self-advocacy and self-determination (National Center on Secondary Education and Transition, 2002). Rates of independent living vary considerably for students with disabilities. The trends for independent living have stayed consistent over the past 30 years with 11% of the original NLTS sample and 15% of the second NLTS samples living independently two years after high school. (Wagner, 2005).

Finally, an important component to anyone's life is that of recreation and leisure and what adults do in their spare time. This can include recreation and

leisure activities that are performed alone, with family, or with friends. Although students with disabilities participate in leisure activities at high rates (Texas Effectiveness Study, 1997), these rates are not equal across disability categories. Only 8.9% of students with autism reports spending a majority of their free time with friends (Cadwallader & Wager, 2003).

Summary and Research Questions

The history of transition practices and follow-up studies paint a picture of the guidelines that affect post-secondary outcomes of students with disabilities. Districts must be prepared to collect both reliable and valid data as well as know how to use this data in comparison to other groups. The purpose of this study was to collect follow-up information for a single school district and to answer the following questions: (a) What post-secondary outcomes do students with disabilities achieve after leaving high school? and (b) How do post-secondary outcomes differ between students with and without disabilities based upon gender, ethnicity, and socioeconomic status? A second purpose was to understand the opportunities and challenges that local school districts may encounter in collecting post-secondary information with their own students.

Method

This study was conducted as part of a larger statewide initiative that included the collection of follow-up data in several districts around the state. Districts that wished to participate in this statewide pilot study were provided the opportunity to apply for small seed grant dollars to fund data collection. The overall purpose of the statewide study was to respond to federal reporting requirements. The state education agency set the

parameters for the statewide study, especially with regard to the overall research design and development of the exit and follow-up survey instruments.

Population and Sample

The district participating in this study was located in mid-sized city in a southern state. Although the immediate surrounding area was rural, three large metropolitan areas were within a 180 mile radius. During the 2004-2005 school year, the school district served over 14,000 students. In addition to one large traditional high school, the district housed three alternative high school programs. The population of interest included students graduating in May 2005 with a regular high school diploma. This population included students who graduated from the traditional high school and one alternative campus offering instruction through different formats. Students who received a GED were not included in the study.

The sample involved both students served by special education and those served by general education. Due to the small number of graduating students served through special education, the entire population of students receiving these services was included in the study. According to school records, 76 students receiving special education services graduated in May 2005. A stratified random sample of 152 general education students were selected to mimic and double the special education graduating population based upon gender and ethnicity. Therefore the total sample consisted of 228 students. The larger general education population provided additional power during statistical analyses and helped correct for sampling error (Hinkle, Wiersma, & Jurs, 2003).

Survey Design

The exit and the follow-up surveys were designed through the state education agency. The expertise from the state agency, regional educational service centers, and a national regional resource center was used to develop the instruments. The state, as a whole, had been previously involved in collecting follow-up information on students with disabilities. The survey instruments and data collection procedures used in this study emerged from the experiences of that earlier effort.

Both the exit-survey and follow-up survey were comprehensive in nature. Both surveys asked current demographic and contact information. The exit-survey requested information in relation to high school preparation and future post-secondary goals. Students were able to respond to items focused around high school coursework, extracurricular activities, and overall preparation from the school and teachers. The follow-up study focused on the outcomes students achieved since leaving high school. The four domains of post-secondary education, employment, independent living, and recreation and leisure were addressed.

Data Collection Procedures

The May 2005 graduating students from the school district were sampled for the purpose of collecting post-secondary outcome data. The exit survey was administered to students prior to graduation during May 2005. This survey provided baseline data and contact information for students following graduation. This survey was administered at the campus where students received their primary instruction.

Students receiving special education were surveyed in a small group (less than ten students) or an individual setting based upon the needs of the stu-

dent. Special education administrators and teachers provided information to determine which method of survey administration most appropriately met students' individual needs.

Students educated in all general education settings were surveyed in a large group (more than ten students) format. The initial survey required 30 to 40 minutes to complete. During this administration, students received a business card with a time and date to return to the school to complete the post-school survey.

During the second survey administration adults assisted students as needed, because special education and general education cohorts were administered the survey simultaneously. For students not returning to complete the survey in-person, surveys were mailed to the addresses provided on the exit survey. Phone calls and emails were utilized for non-respondents in a final attempt to contact participants. The post-school survey took 20 to 30 minutes to complete. In addition to contact information and questions asked during the initial exit survey, the post-school survey sought information regarding the students' activities since high school graduation.

Surveys were coded with an identification number for each respondent. Only the principal investigator had information to match individual students with identification numbers. Students maintained the same identification number throughout the study. In addition, students signed consent forms agreeing to the conditions of the survey. Students under the age of majority signed assent forms and consent forms were mailed to the students' parents/guardians.

RESPONSE RATES FOR THE EXIT SURVEY

The response rate for the initial survey was 82.9% (n=189). The total sample consisted of 228 students. The response rate for students served through general education was higher (85%, n=129) than for those students served through special education (79%, n=60). A total of 165 students were surveyed prior to graduation on school campuses. Follow-up phone calls and survey mailouts to the non-respondents (n=49) were conducted. An additional 24 surveys were completed through additional methods.

A total of 39 students contributed to the non-response rate (228 total sample less 189 respondents). During the initial post-secondary exit survey, 14 students (6 students in general education vs. 8 students in special education) declined to participate in the study. The other 25 students were unable to be reached prior to graduation and did not return the mailed surveys.

RESPONSE RATES FOR THE POST-SCHOOL SURVEY

The response rate for the post-school survey was 61.4% (n=116). The response rate for students served through general education was higher (63.6%, n=82) than for those students served through special education (56.7%, n=34). A total of 16 students were surveyed in-person through invitation to the district. Post-school surveys were mailed to the remaining participants (n=173) with a return rate of 10% (n=19). Follow-up phone calls were made to all non-respondents and 81 additional surveys were completed. An effort to provide equal response among groups during the survey administration was given to educational setting, ethnicity and gender.

The post-school survey had a non-response rate of 73 students. The combined non-re-

sponse rate due to non-working addresses, telephone numbers and non-participants was 24.9% (n=47). Three students (1 student in general education and 2 students in special education) declined to take the survey via the telephone. Two students were currently participating in boot-camp and unable to be reached during the survey administration period. The remaining 21 students were unable to be reached via mailout or telephone. All students were contacted via telephone a minimum of three times. Table 1 provides the response rates based upon educational setting, gender, ethnicity, and socio-economic status for both the exit and post-school survey.

Data Analysis

The results of the survey questions pertaining to post-secondary outcomes were analyzed using loglinear analysis. The use of this technique answers questions of differences that exist among various groups when all variables are categorical (Thompson, 2006). Because the surveys used in this study contained no intervally scaled variables, parametric statistics were not appropriate. Rice (1992) described the loglinear analysis procedure as a research methodology to use when all predictor and outcome variables are categorical. During the data analysis process the data are divided into cell frequencies which serve as the basis for comparisons (Rice, 1992). One way to help visualize the usefulness of loglinear analysis is to consider the parametric equivalent of analysis of variance (ANOVA). Loglinear analysis is closely related to an ANOVA in that differences among groups are identified and examined. This comparison allows researchers to narrow down the specific relationships among variables. Similar to the classic

ANOVA, loglinear analysis checks for a goodness-of-fit and can test all the individual combinations within a data set that can be created (Thompson, 2006).

The popular chi square test of independence tests to see if actual data match what is expected (Sheskin, 2004). Like loglinear analysis, the chi square test is also a nonparametric statistic but only provides an omnibus testing result. The researcher may know that a difference exists among variables but the specific source of the difference is unknown (Thompson, 2006). The loglinear analysis takes the chi square concept into an advanced multivariate form analyzing an infinite number of variables in a single test. Interaction effects are common in social science research, and unlike the chi-square statistic, the loglinear analysis can take into account those interactions, including all main and interaction effects. This analysis provides the researcher a method to pinpoint where differences occur among groups (Thompson, 2006).

A key indication for loglinear analysis is that variables are not designated as independent or dependent. Also the null hypothesis in a loglinear analysis states that no relationship is reflected among the variables tested (Thompson, 2006). Therefore, loglinear analysis demonstrates the relationships among the variables. The most appropriate test statistics for the loglinear analysis is the likelihood ratio chi square statistic, denoted as L^2 (Rice, 1992). The degrees of freedom associated with this formula are $(r-1)(c-1)$, which is the same formula associated with the chi square statistic. A final component of loglinear analysis is the use of natural logarithms that invoke iterations to determine the maximum likelihood estimation (Thompson, 2006).

It is critical to remember when using loglinear analysis that the statistic tests a fit to a model and an effect size can also be "conceptualized as quantifying the degree of fit of models to data" (Thompson, 2006, p.393). Therefore models can be visual-

ized as the expected frequencies that would occur. However, it is important to remember the null hypothesis is that the data are compatible with a model, so one is trying to eliminate models that do not provide statistical significance (Thompson, 2006).

Results

This section presents the results from the follow-up study in terms of the four outcome areas of employment, post-secondary education, independent living, and recreation and leisure. The results producing statistically significant findings using loglinear analyses are highlighted. In addition, four variables, consisting of educational setting, gender, ethnicity, and socio-economic, are used for all analyses. Educational setting distinguishes between students served completely through general education and those students receiving special education services. For the purpose of this study, all students receiving special education are grouped together.

Table 1

Response rate of educational setting, gender, ethnicity, and socio-economic status of exit and post-school surveys

Variable	Sample Frequency for Exit Survey	Response Rate for Exit Survey	Sample Frequency for Post-School Survey	Response Rate for Post-School Survey
Educational Setting				
General education	152	84.9%	129	63.6%
Special education	76	78.9%	60	56.7%
Gender				
Female	114	86.0%	98	63.3%
Male	114	79.8%	91	59.3%
Ethnicity				
African American	81	79.0%	64	57.8%
Hispanic	78	82.1%	64	64.0%
Anglo	69	88.4%	61	62.3%
Socio-Economic Status				
High SES			87	65.5%
Low SES			101	57.4%

N =228, N=189

Employment

Current employment status was compared to the four independent variables of educational setting, gender, ethnicity, and socio-economic status for the analyses. Students were asked to distinguish between not working, working part time (29 hours or less), working full time (30 hours or more), serving in the military, or working only as a volunteer. Consistently, the models involving educational setting were found to demonstrate statistical significance. There were statistically significant relationships between employment status by educational setting ($L^2 = 7.99$, $df = 3$, $p = .046$) and employment status by socio-economic status ($L^2 = 18.09$, $df = 1$, $p = .000$). When the two variables were controlled for one another only socio-economic status produced a statistically significant result ($L^2 = 13.68$, $df = 4$, $p = .008$), indicating that socio-economic status may have created a more powerful interaction than educational setting.

In terms of descriptive statistics for employment status, Table 2 includes the crosstabulation results from the independent variables educational setting and socio-economic status against employment outcome. Students in general education demonstrated

overall employment (including volunteering) at a higher rate (68%) than students in special education (50%). In terms of socio-economic status, the high and low socio-economic status groups demonstrated comparable employment rates, but the type of employment differed greatly. Students who received a free and reduced lunch were employed on a full-time status at a rate double that of those students who did not receive a free and reduced lunch.

In summary, the results provided evidence that educational setting and socio-economic status were related to employment following high school graduation, with socio-economic status playing a larger role. Gender and ethnicity did not produce statistically significant results in terms of employment outcomes.

Post-Secondary Education

This question focused on the various types of post-secondary educational training students received and how education differed among groups. Students responded using the following categories: no post-secondary education, 2-year college, 4-year college, employment related training, and vocational/technical school. For the purpose of the analyses, the category of vocational/technical school was eliminated in the loglinear analysis because only two stu-

dents in the general education sample (less than 2% of the sample) chose this response. This left zero cells in the analysis which caused unreliable results. In addition, the category of employment related training was not included in the analysis for ethnicity only due to the same reason.

The loglinear results coupled with the chi-squared distribution indicated that the interactions of post-secondary education outcomes against educational setting and ethnicity produced statistically significant results ($L^2 = 11.104$, $df = 3$, $p = .011$ and $L^2 = 10.749$, $df = 4$, $p = .030$, respectively). Upon closer examination of educational setting and ethnicity (see Table 3), it appeared as though educational setting may have had more of an impact on the education outcomes than ethnicity.

As reported in the crosstabulation results found in Table 3, students in special education accessed post-secondary education at lower rates than students in general education (46% vs. 74%, respectively). The most dramatic difference occurred in attendance at 4-year colleges, which students in general education attended at a rate almost four-times that of students in special education. In terms of ethnicity, Anglo students attended college settings

Table 2
Educational setting and socio-economic status by employment outcome

Variable	Employment Outcomes				
	Not Employed	Work Part-time	Work Full-time	Military	Volunteer
Full Sample	36.5%	31.3%	22.6%	1.7%	7.8%
Educational Setting					
General Education	32.1%	35.8%	19.8%	2.5%	9.9%
Special Education	47.1%	20.6%	29.4%	0.0%	2.9%
Socio-Economic Status					
High SES	32.8%	37.9%	15.5%	3.4%	10.3%
Low SES	40.4%	24.6%	29.8%	0.0%	5.3%

Note: N=189

at a higher rate than students of color. Roughly 50% of Hispanic students did not participate in post-secondary education.

In summary, with regard to differences in enrollment in post-secondary education, the results indicate that educational setting and ethnicity were related to participation in post-secondary education. Gender and socio-economic status were not related to participation in post-secondary education.

Productive Engagement

In examining the results of employment and educational outcomes, a third variable of interest arose, productive engagement. Productive engagement involves the concept of students

both working and going to school in order to accomplish a higher level of success in future years. For example, Student A may be working full-time in a minimum wage job immediately upon graduation from high school. Upon a surface evaluation it appears as though Student A has obtained a high post-secondary outcome based upon full-time employment. Student B may be working part-time and attending a 2-year college part-time. By separating these variables it may appear as though Student B has obtained a lower employment outcome. However, Student B may achieve a much higher employment outcome in the years following high school

graduation, given the well-documented beneficial effects of post-secondary education. The same types of analyses utilized on other variables were conducted on this new variable, coded productive engagement, to determine the differences in groups among students both working and going to school.

Using the loglinear and chi-squared distribution results for productive engagement, no statistically significant results were found relative to any single group. However, it is worth noting that educational setting did produce a statistically significant result at the $p_{\text{calculated}} > 0.1$ level ($L^2 = 7.321, df = 3, p = .062$). As noted in Table 4, approxi-

Table 3
Educational setting and ethnicity by education outcomes

Variable	Education Outcomes				
	None	2-year College	4-year College	Employ. Related	Voc/Tech School
Full Sample	34.78%	35.65%	23.48%	4.35%	1.74%
Educational Setting					
General Education	26.25%	36.25%	30.00%	5.00%	2.50%
Special Education	54.29%	34.29%	8.57%	2.86%	0.00%
Ethnicity					
African-American	35.14%	32.43%	24.32%	5.41%	2.70%
Hispanic	48.72%	41.03%	10.26%	0.00%	0.00%
Anglo	20.51%	33.33%	35.90%	7.69%	2.56%

Note: N=115

Table 4
Educational setting and ethnicity by productive engagement

Variable	Productive Engagement			
	No working/ No School	School Only	Working Only	School & Work
Full Sample	15.38%	28.31%	21.37%	35.04%
Educational Setting				
General Education	10.98%	32.93%	18.29%	37.80%
Special Education	25.71%	17.14%	28.57%	28.57%
Ethnicity				
African-American	13.51%	27.03%	24.32%	35.14%
Hispanic	26.83%	21.95%	21.95%	29.27%
Anglo	5.13%	35.90%	17.95%	41.03%

Note: N=117

mately 26% of students in special education were not participating in either employment or education compared to 11% of students in general education. This was also true for Hispanic students. Roughly one-quarter (27%) of Hispanic students were not experiencing positive outcomes for either employment or post-secondary education 13% of African American and 5% of Anglo students, although these differences were not statistically significant.

The results raise the question that often different outcomes need to be examined simultaneously to understand the entire picture. Employment and post-secondary education make a logical outcome for productive engagement. As illustrated in the above paragraph, large discrepancies begin to emerge for Hispanic students and students in special education that may not be highlighted elsewhere.

Independent Living

The third area assessed in post-secondary outcomes was independent living. A measurement of current living status of living independently, with parent/family, spouse/roommate, and college dormitory was used for the analyses. Looking at the results from the loglinear and chi-squared distribution analyses, only ethnicity produced a statistically significant result ($L^2 =$

12.706, $df = 6$, $p = .048$). However, educational setting and gender produced a significant result at the $p_{\text{calculated}} > 0.1$ level and may have played a more significant role in the living outcome of students than this data set portrayed ($L^2 = 6.860$, $df = 3$, $p = .077$ vs. ($L^2 = 6.423$, $df = 3$, $p = .093$, respectively). The difference found was that students of color lived outside the parent/family home at a rate lower than that of Anglo students (See Table 5). Also, Hispanic students lived in college dormitory facilities at a lower rate than other groups. However, given the findings that Hispanic students attended 4-year colleges at low rates, this was expected. Unlike analyses of other outcome areas, educational setting did not seem to play as large of a role in independent living outcomes.

In conclusion, the results demonstrated that a degree of variance does exist in terms of different groups achieving levels of independent living soon after leaving high school. Gender and educational setting showed differences. It is important to note that some differences that were found, such as for Hispanic students, may be related to cultural expectations.

Recreation and Leisure

The final outcome area assessed was recreational and leisure. The variable used in the

loglinear analyses was coded in the following fashion. On a list of 24 items, students indicated the number of items in which they participated during the past month. A count was then coded for the variable. The assumption was made that participation in more recreation and leisure activities resulted in a more positive post-secondary outcome.

Overall, all groups indicated high levels of recreational/leisure activities with roughly 90% of each group reporting completing at least one social activity per week. Students preferred to spend free time with the following: oneself, family, friends, and a combination of these people. There was a statistically significant relationship between participation in leisure/recreational activities and educational setting ($L^2 = 17.192$, $df = 3$, $p = .001$). Table 6 shows the differences that existed within this group. Students in general education participated in 15 or more leisure/recreational activities at a rate of 63.4% compared to only 22.9% of students in special education.

The conclusion from recreation and leisure indicated promising outcomes in that respondents from all groups indicated participation in activities. The discrepancies were highlighted for educational setting where students in special edu-

Table 5
Ethnicity by independent living outcome

Variable	Independent Living Outcome			
	Independent	Parent/ Family	Spouse/ Roommate	College Dorm
Full Sample	10.26%	60.68%	12.82%	16.24%
Ethnicity				
African-American	8.11%	67.57%	2.70%	21.62%
Hispanic	7.32%	68.29%	17.07%	7.32%
Anglo	15.38%	46.15%	17.95%	20.51%

Note: N=117

cation participated in fewer activities than their general education counterparts.

Summary and Recommendations

The purpose of this study was to identify differences in the post-school outcomes of youth with and without disabilities who graduated from a local high school. This study was part of a statewide pilot study to collect data for federal reporting purposes. This section briefly summarizes the findings from this study and discusses recommendations for other districts that may wish to collect follow-up information on their students.

The most consistent finding from this study is one reported in many studies; namely, that high school leavers with disabilities are experiencing poorer post-school outcomes than their counterparts without disabilities. What is noteworthy about our findings is that all the participants in our study, students with and without disabilities alike, graduated from high school with a regular diploma.

Despite this similar exit document, almost half (47%) of graduates with disabilities in our study are unemployed six months after leaving high school compared with a third (32%) of graduates without disabilities. Similarly, half (54%) of graduates with disabilities are not participating in any form of post-

secondary education compared to 26% of graduates without disabilities. Given these differences it is not surprising that six months after leaving high school graduates with disabilities are twice as likely as graduates without disabilities to be unengaged in any productive work or post-secondary education activity (26% vs. 11%). Finally, when we asked participants in our study to identify the number of leisure and recreational activities they participated in during the month previous to the completion of the follow-up survey, only 23% of high school graduates with disabilities in our study reported participating in 15 or more activities compared to 63% of graduates without disabilities.

Recommendations

Although the findings from this study should not be generalized beyond the local school district in which it was conducted, this study adds to current knowledge of post-secondary outcomes for students with and without disabilities. The differential outcomes experienced by students with and without disabilities six months after leaving high school are especially noteworthy given that all participants graduated with a regular diploma from the same high school. As importantly, this study provides information of value to other local districts that may be collecting

post-school outcome information on their school leavers with and without disabilities. We conclude with specific recommendations for collecting useful post-school outcome information at the local school district level based upon the limitations and procedures of this study. These recommendations are not intended to represent a comprehensive framework to guide the development and implementation of follow-up studies by local school districts. Rather, they are intended to provide practical advice for local school district practitioners based on this study. Resources to help local practitioners design and conduct follow-up studies are available on the internet (e.g., the National Post-School Outcomes Center, <http://www.psocenter.org>) and in print (e.g., Sitlington & Frank, 1998).

STUDY DESIGN

This study was designed to collect data at two points in time: at high school exit and six months following graduation. This design had the advantage of (a) ensuring that school-based information is collected from students, teachers, and parents before students leave school and (b) collecting early post-school outcome information on students both to gauge early progress and to maintain contact with students. That said, the six month time frame provided a relatively short period for

Table 6
Educational setting by recreation/leisure outcome

Variable	Recreation/Leisure Outcome			
	0-10 Activities	11-14 Activities	15-17 Activities	18+ Activities
Full Sample	17.95%	30.77%	29.91%	21.37%
Educational Setting				
General Education	12.20%	24.39%	36.59%	26.83%
Special Education	31.43%	45.71%	14.29%	8.57%

Note: N=117

students to demonstrate a change in status from that of high school. For example, in this study when students were asked about their independent living status at six months the number one reason provided on the post-school survey for students to be still living at the parent/family residence was financial; they were not earning enough money to live independently. Similarly, post-secondary education may have been another outcome affected by the time frame. Many students still indicated an expectation of attending post-secondary education in the post-school survey, but they first needed to save money for a semester/year.

Local school districts interested in collecting post-school outcome information on school leavers should consider collecting information across multiple points in time. It is highly advisable to collect initial information and obtain contact information from students before they leave school. School districts have natural access to students prior to graduation and this serves as an excellent time to collect this information. In addition, school districts know the preparation that each student received, so this information could potentially become very valuable to schools as changes are implemented. It also is advisable for districts to collect information at six months to maintain contact with school leavers. Collecting additional outcome information at 12 and 24 months, if district resources allow, will provide critical information on student outcomes that can be used for school improvement plans. Of course, collecting outcome information for longer periods of time (e.g., five years) following high school is desirable for capturing a longer transition period that could include the time frame when students enter and complete college.

SURVEY INSTRUMENTS

In this study students completed a survey at the point of high school exit (exit survey) and at six months following graduation (follow-up survey). As described earlier, these surveys were developed with input from several stakeholder groups and field-tested in several locations across the state. Even with this development and field-testing process, some elements of the surveys were difficult to complete for some participants with and without disabilities. Each survey included eight pages of questions. Each was estimated to take twenty minutes to complete although it took as long as 45 minutes for a few participants with disabilities to complete them. Some items used formal language known primarily to professionals in the field of transition as opposed to language familiar to high school students. Some items contained response options that were not mutually exclusive, meaning more than one response might be correct. For example, a question on the follow-up survey asking about annual financial earnings had overlapping categories. Information from these items were not included in the findings reported in this paper.

A well-designed instrument that is understandable to youth and young adults with and without disabilities is a critical component of a well-designed follow-up study (Halpern, 1990). Careful attention should be paid to the focus, clarity, and readability of each question so that respondents will be clear about what information is being sought. This same attention should be given to response options for each question to ensure the corresponding choices are exhaustive, mutually exclusive, and understandable to the respondent. This involves carefully choosing language so that ques-

tions and the corresponding choices following a question are worded appropriately for the youth and young adults. If a question asks for one response then the corresponding response options must allow for only one correct answer per question. Finally, attention should be paid to the overall length of the survey. Local district personnel should conduct a full field-test of each survey directly with youth and young adults with and without disabilities (if both groups are to be included in the follow-up study). Meeting with the field-test respondents following the field-test to obtain their feedback and recommendations on the clarity of questions and response options can be very helpful for improving data collection instruments.

RESPONDENT PARTICIPATION AND ATTRITION

Attrition refers to the number of students not responding to subsequent survey rounds. Many factors affect whether school leavers will be willing to participate in a follow-up study and to continue their participation over time. Initial and continuing participation can be affected by the design of the study, the survey instruments, and the procedures for collecting information from participants. Although it is recommended to collect information from participants for multiple rounds over time, the longer the time frame of the study and the longer the time frame between contact with participants the greater the likelihood of participant attrition (Halpern, 1990).

In the short six-month time frame of this study, roughly 38% of the original sample was lost due to attrition. It is possible a greater number of participants would have been lost to attrition over a longer time frame and additional follow-up survey administration points. One concern in research is that non-re-

spondents provide different responses than respondents, resulting in biased data. To help control for this, in this study multiple procedures (e.g., face-to-face meetings, telephone calls, follow-up postcards, incentives for participation) were used to ensure that response rates remained above 50% for the key sampling factors of educational setting, gender, socioeconomic status, and ethnicity.

The "user-friendliness" of the survey instruments and the methods for collecting follow-up information can also affect initial and continuing participation. In this study, respondents with and without disabilities completed the exit surveys in group settings prior to leaving school. Respondents were invited back to campus to complete the follow-up surveys. Food (pizza) was provided and prize drawings were held to encourage participation. The first author was available to answer respondent questions about the surveys during these group administrations. Respondents also had the option of having the survey read to them. Some individuals who did not participate in the post-school group administration completed the follow-up survey through the mail or through personal or telephone interviews. Very few surveys were returned through the mail compared with generally positive response rates via requests for personal or telephone interviews.

The methods of contacting respondents also play a role in the response rates. The closer the connection a researcher has with the population being studied the higher the response rate. For example, the first author in this study was a former teacher within the district being studied. Because the researcher previously had contacts with administrators, teachers and students, cooperation was attained

relatively easily. Another benefit to this was the researcher was able to ask teachers within the district if additional contact information was known for students. For example, one student was reached on the post-school survey because a current special education teacher called and asked the student to participate. Similarly, another interesting aspect of ensuring connection to the respondents involved how the student was informed as to who was collecting the research. Often when phone calls were made, students were reluctant to answer and parents/families were reluctant to pass the telephone to the student without first realizing the school district was collecting the information. Individuals have a personal connection with their school district and specific school, not with an outside agency hired to collect data.

There is a long history in special education of collecting follow-up information on school leavers with disabilities. Recent federal mandates have moved the collection of follow-up information into the realm of state reporting requirements. States may invite or request local school districts to be involved in this effort. There are many potential advantages for follow-up information to be collected through and by local school districts. School districts are in the unique position to have already established relationships with students. Having teachers contact former students may prove very successful in keeping students engaged in follow-up studies and reducing attrition rates. School district personnel also have a strong understanding of the academic and transition preparation provided to students. Districts can create tailored questions specifically targeting district needs. Finally, as perhaps most importantly, local school district personnel will be

in the best position not only to obtain useful information but to use this information to create effective changes to ensure successful outcomes for future graduates.

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