



Cornell University
School of Industrial and Labor Relations
Employment and Disability Institute

TRANSITIONS

Policy Brief

**Working My Way Through
High School:**

**The Impact of Paid
Employment on
Transitioning Students
with Disabilities**

David Brewer
Employment and Disability Institute



Table of Contents

Acknowledgements1
Introduction/Background..... 2
Descriptions and Results of Longitudinal Studies 6
Results of Intervention Based Research..... 9
Summary12
References13



Acknowledgements

The TRANSITIONS Series is produced by Cornell University’s Employment and Disability Institute. This information series focuses on supporting the continued development and evolution of the educational paradigm in the United States. Specifically the ways in which we prepare youth with disabilities for successful adult living, learning and earning.

This brief was written by David Brewer, Cornell University’s Employment and Disability Institute, with editorial support from Thomas Golden, Cornell University’s Employment and Disability Institute.

Introduction/Background

As any school district administrator will volunteer, special education is expensive. At a time of high academic accountability from local taxpayers and from the state and federal government, school districts are forced to examine the costs and effectiveness of their various educational programs. Chambers, et al (2004) documented the cost associated with special education students with the highest needs:

"...the base expenditure on a regular education student who requires no services from any special program is \$6,556. A comparison of this figure to the average per pupil expenditures of students with disabilities at the top of the expenditure distribution reveals that regardless of the type of school in which students with disabilities are enrolled, the difference amounts to tens of thousands of dollars, ranging from a difference of \$29,638 for secondary school students who are at the top 5 percent of the expenditure distribution (=35,924-\$6,556) to a difference of \$82,410 for students in special education schools who are at the top 1 percent of the expenditure distribution (=88,966-\$6,556)." (p. 6)

Lacking positive student results at graduation, one may well wonder if this money has been well spent, or could be better allocated in a different way.

Unfortunately, if the lives of adults with disabilities are any measure of the impact of decades of special education, there are serious problems that must be addressed. The employment rate among adults with disabilities, for instance, remains low. Houtenville (2004) indicated: " In the year 2002, an estimated 30.9 percent (plus or minus 1.0 percentage points) of civilian, non-institutionalized, men and women with a disability, aged 18-64 in the United States were employed." This figure alone should sound an alarm when one considers the future quality of life for our graduating students. Halpern (1993) recommended we frame such considerations from both a societal perspective as well as the from the point of view of the person:

"If someone in transition chooses any particular outcome, such as employment, then the measurement of that outcome is relevant for that person. Such measurement can be both objective (e.g., Is the person employed?) and subjective (e.g., Is the person satisfied with the job?)." (p. 489)

If a group of students choose paid employment as a goal for adult life, would not those same students want their educational program to measure the extent to which students actually earn a paycheck? To summarize, one must carefully define both the outcome of *employment* as well as the practice of *career development activities* to establish a pattern of effective practices meaningful to students, their families, educators, employers, agency personnel and policymakers.

The state Vocational Rehabilitation (VR) systems and related agencies may appear to provide a solution to this problem of unemployment. However, as Benz, et al (1995) found through their survey of parents and students with disabilities:

"Students and parents are: (a) confused about the transition process and the different transition resources in the community; (b) intimidated by the VR application process; (c) frustrated with the number of assessments that must be conducted for eligibility determination, and the lack of meaningful information about the reasons for these assessments; and (d) overwhelmed by, and even somewhat embarrassed about, the variety of professionals with whom they must discuss their needs in order to obtain transition information and resources." (p. 143)

At minimum, a close partnership must exist between educational programs and VR agencies at the local level to address this confusion and establish collaborative relationships around individual students and their families.

School-agency planning that appears to be supported by the available research is in the area of career development for individual students with disabilities. More specifically, planning partners must support students as they take steps necessary to obtain paid, unsubsidized employment opportunities prior to graduation. Simply stated, if a student with a disability works in a job for minimum wage or above, for a period of time prior to graduation, that same student will greatly increase his or her chances for employment later on in life. What follows is a review of research that began in the early 1980s and continues to this day that, demonstrating how this practice leads to higher employment rates for our graduates.

Nine studies were chosen for this literature review, all of which were quantitative in nature. Table 1 details the name or the study or author, the type of study, and the nature of the sample. Five of these studies were longitudinal samples where graduates with disabilities and significant people were interviewed to collect comparative data about their current status, and to discover what factors supported positive outcomes in employment, postsecondary education and community living. The remaining four studies were based on an intervention for a group of students, measuring the results in the short term and at some point in the future. All of these studies in some way address work experiences for students with disabilities as a part of their inquiry; seven of the nine studies specifically address the issue of paid employment while in school.

Table 1: Research that includes the impact of wages paid to students with disabilities

Name of Study/Author (date completed)	Type of research	Nature of sample
Hasazi (1985)	Longitudinal: “Factors associated with the employment status of handicapped youth were investigated...” (Hasazi, Gordon and Roe, 1985, p. 455)	462 youths from nine Vermont school districts, who exited high school between 1979 and 1983.
National Longitudinal Transition Study (1993)	Longitudinal: “...used multiple data-collection strategies...to shed light on the characteristics of youth and their educational experiences, social activities, postschool employment, independence and adult services.” (Blackorby and Wagner, p. 401)	“The NTLs includes more than 8000 youth who were ages 13 to 21 and in special education in secondary school in 1985.” (Blackorby and Wagner, p. 401)
VR Longitudinal Study (2000)	Longitudinal: “...addresses questions of interest to federal officials in the Office of Special Education and Rehabilitative Services (OSERS) concerning the characteristics, services, and outcomes of transition-aged youth.” (Hayward and Schmidt-David, p. iv)	“...began in November 1994, will end in January 2000...a multistage, nationally representative, design that initially involved selection of a random sample of 40 local VR offices (in 32 state agencies located in a total of 30 states) and a sample of 8,500 current and former consumers of VR services.” (Hayward and Schmidt-Davis, p. 4)
National Longitudinal Transition Study – 2 (ongoing)	Longitudinal: “NLTS2 is a 10-year study that is documenting the characteristics, experiences, and outcomes...” (Levine, Marder, and Wagner, p. ES-1)	“...of a nationally representative sample of more than 11,000 youth who were ages 13 through 16 and were receiving special education services in grade 7 or above in the 2000-01 school year.” (Levine, Marder, and Wagner, p. ES-1)

Name of Study/Author (date completed)	Type of research	Nature of sample
New York State Post School Indicators Survey (1999)	Longitudinal: "...personal interviews with former special education students from the Big Five Cities of Buffalo, New York, Rochester, Syracuse and Yonkers." (NYS VESID, 1999, p. 1)	"The sample of 1,037 former special education students interviewed represents 13 percent of all 8,118 former special education students who exited in school year 1995-96 from the Big Five City school districts." (NYS VESID, 1999, p. 1)
Wehman, et al (1989)	Intervention: Students were employed in supported employment positions and received job site training, ongoing support and follow-along services.	34 students from Virginia with I.Q.'s that ranged from 24 to 61, ages 17 to 22 years old.
Siegel, et al (1992)	Intervention: The Career Ladder Program (CLP). "Three components support the CLP mission: --A semester-long supervised work experience in a real work setting during the senior year of high school, called a community classroom. --A concurrent weekly Employment Skills Workshop curriculum. --Continuously available postsecondary services provided by CLP transition specialists, in collaboration with the California Department of Rehabilitation..." (Siegel, et al, p. 347)	94 students from San Francisco with mild disabilities (learning disabled, mild mental retardation, emotional disturbance, and language disabled)
Benz, Lindstrom, and Yovanoff (2000)	Intervention: The Youth Transition Program (YTP). "...to examine relationships between education and transition outcomes for students with disabilities and factors that have been suggested by research and implemented over time as part of the YTP." (Benz, Lindstrom, and Yovanoff, p. 512)	Students from the ten year YTP database "who exited high school up through the 1997/98 school year (n=917)..." and achieved a high school diploma. (Benz, Lindstrom, and Yovanoff, p. 513)

Name of Study/Author (date completed)	Type of research	Nature of sample
Leuking and Fabian (2000)	Intervention: "The Bridges program consists of three phases: (a) the pre-vocational orientation program, during which students and their families are introduced to Bridges and initial vocational goal-setting activities are conducted (two to three weeks); (b) pre-vocational preparation, consisting of individual or group career guidance, job preparation, and job search skills training (two to four weeks); (c) internship placement and support" (Leuking and Fabian, p. 207)	3024 students, all of which participated in the Bridges program, across 5 states and across all disability groups.



Descriptions and Results of Longitudinal Studies

Hasazi, Gordon, and Roe (1985)

Hasazi, Gordon, and Roe led this well-known longitudinal study, repeatedly cited in the literature since it was published in 1985. 462 youths were interviewed from nine Vermont school districts. All of these students had exited high school between 1979 and 1983 and crossed disability classifications. This study created a benchmark, laying down evidence of a clear relationship between paid employment while in school, and paid employment after graduation:

"The relationship of summer jobs, school-year part-time jobs, and work experience school programs with current employment status produced some interesting findings. Of those students who had no summer jobs, only 37% were employed, versus employment rates of 46% for those who had subsidized summer jobs and 69% for those who had nonsubsidized jobs. These relationships were significant and analogous over all levels of location, gender, and level of functioning." (p. 460)

Bellamy (1985) provided expert commentary on this study, particularly as it pertained to paid employment verses unpaid work experience:

“Holding part-time or summer jobs during high school was related to employment status, wage level, and percent of time employed since leaving school. Participation in vocational education was related to employment status, but no such relationship existed for participation in work experience programs...It is unclear whether vocational education and jobs during school are complementary redundant predictors of employment outcomes. The data do present a challenge to program developers to capitalize on the possible effects of employment during school, especially since engaging in subsidized jobs while in school was not associated with the same postschool employment results as competitive part-time and summer work.” (p. 476)

National Longitudinal Transition Study

Through a variety of data collection strategies, the National Longitudinal Transition Study (NLTLS) was able to capture data on over 8000 students nationally, across disability groups and other demographic characteristics. Unfortunately, this study did not differentiate between paid and unpaid work experience during its interviews with students and their significant others. However, Heal and Rusch (1995) did present data regarding the significance of family characteristics:

"Family characteristics also were significant predictors of postschool employment. When the block was entered, household income...was its dominant predictor, suggesting that the advantages of high socioeconomic status accrue to individuals with as well as those without disabilities." (p. 484)

This finding was echoed by Newman and Cameto (1993) in their research on postsecondary education from the NLTLS database: "...young adults in academic programs were significantly more likely to have come from households with higher incomes than were those who were not attending postsecondary schools (45% vs. 30%; $p < .10$)." (p. 13). However, Newman and Cameto did not find a relationship between high school work experiences (paid or unpaid) and postsecondary enrollment, opening questions on the effect work may have on a student's academic achievement.

VR Longitudinal Study

Hayward, B., Schmidt-Davis, H. (2000) led the VR Longitudinal Study, which began in 1994, and ended in 2000. This was "...a multistage, nationally representative, design that initially involved selection of a random sample of 40 local VR offices (in 32 state agencies located in a total of 30 states) and a sample of 8,500 current and former consumers of VR services." (p. 4) This comprehensive study addressed "questions of interest to federal officials in the Office of Special Education and Rehabilitative Services (OSERS) concerning the characteristics, services, and outcomes of transition-aged youth." (p. iv) In particular, they found that VR services did not necessarily lead to a

reduced reliance on family and public assistance. Of those receiving assistance, 78.1% were SSA beneficiaries: "Among youth who had received special education services in high school, one-third (33.3 percent) were receiving assistance at entry to VR, and the same proportion (32.6 percent) continued to receive such assistance following exit from VR services." (p. 13) This study looked closely at the work history of their subjects, and found that only 24.9 percent of special education applicants were working at the time of application to VR. However, those who were working at the time of application were more likely to be successful later on:

"Factors that influence achievement of an employment outcome for youth VR consumers who had received special education services in high school included working at application to VR, relatively higher status on gross motor functioning, and those who receive education or training services were significantly more likely than their peers to achieve an employment outcome." (p. 29)

National Longitudinal Study 2

The National Longitudinal Transition Study is just underway, and promises to look closely at the role of paid employment versus unpaid and other categories of work. Levine, Marder, and Wagner (2004) provided a glimpse into the students and former students under review: "NLTS2 is a 10-year study that is documenting the characteristics, experiences, and outcomes of a nationally representative sample of more than 11,000 youth who were ages 13 through 16 and were receiving special education services in grade 7 or above in the 2000-01 school year." (p. ES-1) Once again, family income is a key concern in the areas of access to services and employment rates:

"In the general population, youth from families with higher incomes have higher rates of employment and higher wages... This pattern also holds among youth with disabilities... The 1-year employment rate of youth from families with incomes of more than \$25,000 is approximately 20 percentage points higher than that of youth from lower-income families (60% and 64% vs. 42%, $p < .001$). Current employment rates of youth with disabilities from families with incomes of more than \$25,000 are more than double that of youth from lower-income families (25% and 30% vs. 12%, $p < .001$). The percentage of youth earning the minimum wage or more also is higher among youth in the highest-income group (57%) than among those in the lowest-income group (41%, $p < .05$)." (p. 5-9)

The NLTS-2 has already provided detailed information regarding the nature of the work that students are engaging in:

"The vast majority of youth (91%) who have work-study jobs receive school credit and/or pay for their work. The most common arrangement, which applies to 48% of work-study students with disabilities, is to receive school credit but not pay. Another 28% receive both school credit and pay, and 14% receive pay only." (p. 5-2)

"Paid employment that is not school related (i.e., not work-study) accounts for the vast majority of the employment of youth with disabilities who have jobs. According to parents, somewhat more than half of youth with disabilities (54%) hold regular paid jobs during a 1-year period, similar to the 50% of the 13- to 17-year-olds in the general population who did so in 1998." (p. 5-3)

New York State Post School Indicators Survey (1999)

The New York State Education Department (NYS VESID, 1999) conducted interviews of former special education students from 5 urban settings, including Buffalo, New York, Rochester, Syracuse and Yonkers. "The sample of 1,037 former special education students interviewed represents 13 percent of all 8,118 former special education students who exited in school year 1995-96 from the Big Five City school districts." Students surveyed were representative of "all disabilities, reasons for exit and educational settings." (p.1) These students were compared to 217 former general education students from Buffalo, Rochester, Syracuse and Yonkers.

This study found that paid employment has a significant impact on post school outcomes:

"Having a paid work experience was especially valuable. Students who reported having a paid work experience while attending high school were competitively employed a year after school exit at a much higher rate (51 percent) than students who did not report having such experiences (28 percent)." (p.2)



Descriptions and Results of Intervention Based Research

Wehman, et al (1989)

Wehman, et al (1989) studied the impact of providing supported employment services to 34 students from Virginia with I.Q.'s that ranged from 24 to 61, ages 17 to 22 years old:

"The supported competitive employment approach emphasizes vocational intervention directly at the job site *after* the person is hired. This requires the use of a skilled human services professional who can provide specialized job placement, job site training, and on-going support services. The major contrast between supported competitive employment and traditional vocational education experiences is that students receive permanent follow-along support at the job site by staff. Without this support they generally will fail to keep their job. Students are employed in real jobs, such as business." (p. 99)

This project generated positive results for its student subjects:

"Based on the cumulative total of months worked, 74% of the students have remained in their jobs longer than six months. Approximately 40% of the total students placed remain employed, with many transitioning to local adult service programs. The retention rate has perhaps been influenced by the relatively low measured intelligence of the students and the fact that most students came from segregated schools...Successful retention beyond six months has been the outcome for 92% of the students attending an integrated school as compared to 64% of those enrolled in a segregated setting." (p. 104)

The success of this project was attributed to job placement prior to graduation, parent support, and changes in the policies, funding sources, staff and agency responsibilities of the service delivery system.

Siegel, S.; Robert, M., Waxman, M., Gaylord-Ross, R. (1992)

The Career Ladder Program (CLP) was led by Siegel et al in 1992 for 94 students from the San Francisco area with mild disabilities (e.g., learning disabled, mild mental retardation, emotional disturbance, and language disabled). This program contained three components: "--A semester-long supervised work experience in a real work setting during the senior year of high school, called a community classroom. --A concurrent weekly Employment Skills Workshop curriculum. -- Continuously available postsecondary services provided by CLP transition specialists, in collaboration with the California Department of Rehabilitation..." (p. 347) The students who were involved in this project developed solid employment numbers that withstood the test of time. The positive results of this project were attributed to student participation in part-time employment, suggesting that part-time employment leads to gainful employment as a student's future career develops:

"The CLP participants earned a higher hourly wage than the NLTS sample. Also, about half of the CLP participants were receiving some benefits during most postsecondary intervals, consistent with the proportion of full-time workers. The program's counseling and referral component led to a number of youths' participating in continuing education, but few completed courses of study. Still, at the time of this writing, 92% of all CLP participants were working or enrolled in some course(s), or both." (p. 354)

"The difference between this higher employment rate and the national average is accounted for mainly by the greater proportion of part-time employment by CLP participants. Part-time employment does not suggest upward job mobility, yet it may be a critical rung on the career ladder." (p. 354)

Benz, M., Lindstrom, L., and Yovanoff, P. (2000)

The Youth Transition Program (YTP) has been in existence across several states for over ten years. The program itself contains the following characteristics:

"The YTP provides services to students beginning during the last 2 years they are in high school and continuing, if needed during the early transition years after leaving school. Through the YTP students receive (a) transition planning focused on postschool goals and self-determination, and help to coordinate school plans with relevant adult agencies; (b) instruction in academic, vocational, independent living, and personal-social content areas, and help to stay in school and obtain a completion document; (c) paid job training while in the program, and help to secure employment or enter postsecondary training upon leaving the program; and (d) follow-up support services for up to 2 years after leaving the program, provided on an as-needed basis, to help students negotiate the vagaries of the transition years more effectively and build on the successes they have already achieved." (p. 512)

This research was conducted on students from the ten year YTP database "who exited high school up through the 1997/98 school year (n=917)..." (p. 513) and achieved a high school diploma. The YTP seems to contradict the earlier findings of the NLTS in that students who engage in employment benefit, not only in their employment rates, but also in their postsecondary participation rates:

"Two program-related variables predicted student engagement in productive work or continuing education at the time of program exit...Students who held two or more jobs while in the program were *almost two times more likely* to be engaged in work or continuing education at exit than students who held fewer than two jobs." (p. 517)

Leuking, R.G., Fabian, E.S. (2000)

3024 students representing the spectrum of disability groups participated in the Bridges program in 5 states.

"The Bridges program consists of three phases: (a) the pre-vocational orientation program, during which students and their families are introduced to Bridges and initial vocational goal-setting activities are conducted (two to three weeks); (b) pre-vocational preparation, consisting of individual or group career guidance, job preparation, and job search skills training (two to four weeks); (c) internship placement and support, which includes specific skills training, monitoring of students' work performance, and other activities in support of the employer/employee relationship. The internship is a work experience whereby a student intern spends a minimum of 12 consecutive weeks performing work tasks

in a community employment setting. The employer pays the wages and benefits for the student, but the employer and the student are under no obligation to continue the employment relationship beyond the 12-week period..." (p. 207)

As with the other programs that emphasize student work for pay, this program posted highly positive results:

"Of the original 3,024 students entering the study 2,524 (83%) of them secured internship positions, with 2,119 or 84% of those completing the prescribed internship period. 1,586 (75%) of those completing the internship were offered positions within the original host company. The types of internship positions these participants secured included a range of jobs in a variety of industries...The average hourly wage during the internship was \$5.40 and the average number of hours worked was 20.1." (p. 212)

The authors explored the factors that leading to successful student participation:

"Examination of the predictors indicates that the two work behavior variables, completion of the internship and whether a job offer occurred, were the strongest predictors of outcome. Students who received a job offer were 5 times more likely to be employed at six months, and those who completed the internship were 4 times more likely to be employed." (p. 213)



Summary

It is clear from the accumulated research that youth and their families who collaborate with educators, local agency personnel and businesses are likely to be employed as adults. For the past two decades, a series of studies have demonstrated the effectiveness of students with disabilities working for pay while attending high school. In most cases, it is the nature of the support provided to the student on and off the job that makes the difference between a successful job placement and an unsuccessful one. Heal, et al (1989) looked at 44 students from 10 states, who were in paid employment at minimum wage or better, and compared those who were able to retain their employment with those who were terminated after a short period of time. They found that the students who retained their jobs beyond six months had "... transition agency follow-up and supervisor on the job (32.7% for successful, 46.5% for unsuccessful)." (p. 173) School-VR agency connections were emphasized by Szymanski and King (1989) in their description of the role of the VR youth counselor:

"Based on professional preparation, potential functions include (a) career and psychosocial counseling; (b) consultation with special and vocational education teachers, school counselors, and other education professionals regarding the vocational implications of disability and potential educational adaptations; (c)

coordination of school, family, and community efforts in career planning and preparation; (d) job placement, job analysis, job modification and restructuring, and placement follow-up; (e) work adjustment counseling; (f) coordination of job support services (e.g., job coaches, transportation, personal care attendants) during transition; (g) referral to and coordination with adult service agencies; (h) specialized planning and links with disabilities; and (i) development of individual transition plans ..." (p.5)

Perhaps some of these roles can be shared among the various planning partners, including school and community agency personnel, sharing both the workload and the expense of providing a proven practice.



References

Bellamy, G. T. (1985). Transition Progress: Comments on Hasazi, Gordon, and Roe. *Exceptional Children, 51*(6), 474-477.

Benz, M., Johnson, D., Mikkelsen, K., Lindstrom, L. (1995). Improving collaboration between schools and vocational rehabilitation: Stakeholder identified barriers and strategies. *Career Development for Exceptional Individuals, 18*, 133-144.

Benz, M., Lindstrom, L., Yovanoff, P. (2000). Improving Graduation and Employment Outcomes of Students with Disabilities: Predictive Factors and Student Perspectives. *Exceptional Children, 66*(4), 509-529.

Chambers, J. G., Kidron, Y., Spain, A. (2004). *Characteristics of High-Expenditure Students with Disabilities, 1999-2000*. Palo Alto, CA: Center for Special Education Finance.

Halpern, A. S. (1993). Quality of life as a conceptual framework for evaluating transition outcomes. *Exceptional Children, 59*(6), 486-498.

Hasazi, S., Gordon, L., Roe, C. (1985). Factors associated with the employment status of handicapped youth exiting high school from 1979 to 1983. *Exceptional Children, 51*(6), 455-469.

Hayward, B., Schmidt-Davis, H. (2000). *Characteristics and outcomes of transitional youth in VR: A longitudinal study of the vocational rehabilitation service program*. Research Triangle Park, NC: Research Triangle Institute.

Heal, L. W., Copher, J.I., DeStefano, L., Rusch, F. (1989). A comparison of successful and unsuccessful placements of secondary students with mental handicaps into competitive employment. *Career Development for Exceptional Individuals, 12*(2), 167-177.

Heal, L. W., Rusch, F.R. (1995). Predicting employment for students who leave special education high school programs. *Exceptional Children*, 61(5), 472-487.

Houtenville, A. J. (2004, May 15,2003). *Disability statistics in the United States*. Retrieved 08/07/04, from <http://www.disabilitystatistics.org>

Leuking, R. G., Fabian, E.S. (2000). Paid internships and employment success for youth in transition. *Career Development for Exceptional Individuals*, 23(2), 205-221.

Levine, P., Marder, C., Wagner, M. (2004). *Services and supports for secondary school students with disabilities: A special topic report of findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

Newman, L., Cameto, R. (1993). *What makes a difference? Factors related to postsecondary school attendance for young people with disabilities*. Menlo Park, CA: SRI International.

NYS VESID (1999), *The Post School Status of Former Special Education Students in the big five cities*, retrieved 8/12/04, from <http://www.vesid.nysed.gov/specialed/transition/dandr.htm>

Siegel, S. R., M., Waxman, M., Gaylord-Ross, R. (1992). A follow-along study of participants in a longitudinal transition program for youths with mild disabilities. *Exceptional Children*, 58(4), 346-356.

Szymanski, E. M., King, J. (1989). Rehabilitation counseling in transition planning and preparation. *Career Development for Exceptional Individuals*, 12(1), 3-10.

Wehman, P., Parent, W., Wood, W., Talbert, C.M., Jasper, C., Miller, S., Marchant, J., Walker, R. (1989). From School to competitive employment for young adults with mental retardation: transition in practice. *Career Development for Exceptional Individuals*, 12(2), 97-105.

Wolters, K., O'Day, B., Andersson, Y., Rangel-Diaz, L., Hawkins, G. (2000). *Transition and Post-School Outcomes for Youth with Disabilities: Closing the Gaps to Post-Secondary Education and Employment*. Retrieved August 8, 2004, from http://www.ncd.gov/newsroom/publications/2000/transition_11-01-00.htm#8