

379
N81d
No. 356

POSTSECONDARY EMPLOYMENT OUTCOMES FOR YOUTH
WITH SERIOUS EMOTIONAL DISTURBANCE:
AN ANALYSIS OF NATIONAL DATA

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

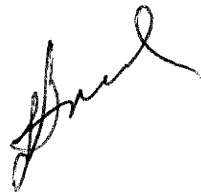
DOCTOR OF PHILOSOPHY

By

Karen L. Barnes, B.A., M.Ed.

Denton, Texas

August, 1992



Barnes, Karen L., Postsecondary Employment Outcomes for Youth with Serious Emotional Disturbance: An Analysis of National Data. Doctor of Philosophy (Special Education), August, 1992, 86 pp, 15 tables, bibliography, 69 titles.

The U.S. Department of Education commissioned a nationwide study to determine the community adjustment of special education students after leaving school. The initial data collection for the National Longitudinal Transition Study (NLTS) was conducted in 1987 with a sample of approximately 8,000 subjects. The report, which was published in 1991, is expected to influence future policy decisions related to special education services for youth with disabilities.

Utilizing this national data base, a secondary analysis was conducted to study postsecondary employment outcomes for youth with serious emotional disturbance (SED). A subset was developed based on the criteria for inclusion in the multivariate analysis of postsecondary employment, these criteria being that the youth with SED is out of school, 16 years of age or older, and not institutionalized. The regression procedure used in the NLTS was modified for use with the smaller sample of subjects in the subset.

As a result of the secondary analysis, it was possible to describe the characteristics and experiences of the youth

with SED in the subset. By using the logistic regression procedure, it was found that gender, frequency of seeing friends, and means of school exit as variables related to employment outcomes for youth with SED.

TABLE OF CONTENTS

	Page
LIST OF TABLES	v
Chapter	
I. INTRODUCTION	1
Purpose	
Significance	
Limitations	
Definition of Terms	
Research Questions	
II. LITERATURE REVIEW	12
Overview of the Review	
Follow-Up Studies Prior to 1980	
Follow-Up Studies 1980 to 1991	
Follow-Up Studies of Students with Serious Emotional Disturbance	
Developing a Model	
III. METHODOLOGY AND PROCEDURE.	29
The National Longitudinal Study: Subjects and Instrumentation	
Subjects with Serious Emotional Disturbance: An Analysis of Variables Related to Employment Outcomes	
IV. RESULTS.	43
V. DISCUSSION AND RECOMMENDATIONS	58
Discussion	
Recommendations for Future Research	
APPENDICES	67
A. Alphabetic List of 124 Variables and Labels	
B. National Longitudinal Transition Study	

REFERENCES. 76

LIST OF TABLES

Table

1.	Variables Hypothesized to Influence Postsecondary Employment	36
2.	Independent Variables with Less than an 80% Response Rate	37
3.	Revised Dichotomous Variables for Use in Logistic Regression	38
4.	Distribution of Out-of-School Youth by Age and Ethnicity	45
5.	Parent Report of How Youth Exited School	48
6.	Vocational Education Courses Taken While in School	50
7.	Residential Arrangements for Out-of-School Youth	50
8.	Vocational Rehabilitation Services Accessed in the 12 Months Prior to the Parent Survey	51
9.	Vocational Services Obtained by Out-of-School Youth in the 12 Months Prior to the Parent Survey	52
10.	Employment Status of Out-of-School Youth	52
11.	Length of time Employed at Job Held at Time of Survey	53
12.	Hourly Wages Earned by Part and Full-Time Competitively Employed Youth	54
13.	Hours Worked Per Week for Part and Full-Time Competitively Employed Youth	55
14.	Backward Elimination Procedure: Dichotomous Independent Variables	56
15.	Analysis of Maximum Likelihood Estimates: Model Significance Level $<.05$	56

CHAPTER I

INTRODUCTION

The Education of the Handicapped Amendments of 1990 (Federal Register, October, 1990) reflect recognition, at the federal level, of the need for commitment to the provision of transition services for all youth with disabilities, and the need to improve programs and related services for children and youth with serious emotional disturbance. Compliance with the transition mandate, and response to the initiatives targeting improvement for students with serious emotional disturbance (SED) should focus attention on the need to provide comprehensive transition services for secondary school-aged students with SED.

Services that assist youth with SED in transition to adult life, including employment, are frequently inadequate (Knitzer, Steinberg, & Fleisch, 1990). Personnel that provide vocational training are seldom prepared to work with students with behavioral disorders (Rusch & Phelps, 1987). The support system that is needed for successful transitioning from school to the community is nonexistent in many communities (Stroul & Freidman, 1986), and alternative treatment settings (e.g., residential treatment centers) in

which opportunities for community-based experiences are provided are the exception (Modrcin, 1987).

Federal Transition Guidelines

The Education of the Handicapped Act of 1975 (P.L. 94-142) has evolved over the past 15 years in response to best practices that have been identified in the field of special education. With the signing of the 1990 amendments to this legislation, the name was changed to the Individuals with Disabilities Education Act (IDEA), an action that reflects current values in the field (Goode, 1988; Mount, Beeman, & Ducharme, 1988; Weick, 1988; Wolfsenberger, 1983).

The transition of students from secondary special education to postsecondary employment received national attention in 1984, when the Office of Special Education and Rehabilitation Services' (OSERS) Assistant Secretary presented a definition and model for transition (Will, 1984). The interest in transition at the federal level was prompted, in part, by the publication of national data which indicated that many persons with disabilities were experiencing high unemployed rates (U.S. Bureau of the Census, 1982).

Two changes in the 1990 IDEA, Section 101, that will influence transition services are (a) an expanded definition of transition and (b) mandatory transition planning. The definition of transition in the IDEA has been broadened to include outcomes of postsecondary education, vocational

training, integrated employment, continuing and adult education, adult services, independent living, and community participation. This definition is compatible with the expansion of the OSERS model (Halpern, 1985). The importance being attributed to transition services is demonstrated in the requirement that an Individualized Transition Plan (ITP) be developed for students, age 16 and older, receiving special education services. This action makes planning for transition to the community critical.

Influence of Research

Changes contained in the IDEA related to transition can be attributed to studies of postschool outcomes for students who have received special education services. Surveys have been conducted in several states to determine how former special education students were functioning after leaving school (Edgar & Levine, 1987; Hasazi, Gordon, & Roe, 1985; Mithaug, Horiuchi, & Fanning, 1985). The results of these surveys confirmed that students with disabilities leaving school had high unemployment rates, and a high proportion of those employed received minimum or subminimum wages.

Program Improvement for Students with

Serious Emotional Disturbance

Program improvement for students with serious emotional disturbance (SED) is another area addressed in Section 307 of the 1990 IDEA. Federal initiatives in this legislation

encourage improvement of programs and related services, and interagency collaboration.

As a result of the legislative action in the area of transition, all special education students, including those with SED, will be required to participate in transition planning. It can be expected that the focus on programs for the population with SED will require an assessment of service at the secondary school level, and an analysis of outcomes for the students who exit the programs.

Influence of Research

Research has also demonstrated the need for improving programs and services for students with SED. The results of studies indicate that these students drop out of school at a rate near 50% (Knitzer et al., 1990), a shortage of trained personnel (National Clearinghouse for Professions in Special Education, 1988), and failure of parents and teachers to access community services (Burchard & Clarke, 1990).

Data concerning outcomes for youth with SED were not collected until the early 1980s (Edgar & Levine, 1987; Mithaug & Horiuchi, 1983), and information related to transition is limited for this specific population (Neel, Meadows, Levine, & Edgar, 1988).

Congress Initiates a Transition Study

A research project that was initiated at the federal level is beginning to provide information about special education programs and their influence on postsecondary

outcomes for youth with disabilities. The Office of Special Education Programs (OSEP) of the U.S. Department of Education (USDE), contracted with SRI International to collect and analyze the required data (Wagner, Newman, & Shaver, 1989).

The National Longitudinal Transition Study (NLTS) was used to collect data from a nationally representative sample of approximately 8,000 students receiving special education services at the secondary level in the 1985-1986, and 1986-1987 school year. Student and school information were collected in 1987. Parent interviews, that were utilized as a major source of information, were conducted in the summer and fall of 1987. The results of this first round of data collection (Wagner et al., 1991) was published in September, 1991, and the report released by the USDE in February, 1992.

The report provides a description of the characteristics of youth who have received special education services, of programs in which they participated, and their performance in school. As youth exit the school programs, data collected provides information about postsecondary outcomes in the areas of employment, education, independent living, and social adjustment. Many of the findings reported in the NLTS are reported for both the total population of youth with disabilities, and for individual disability categories. The analyses that attempt to identify the relationship between school programs and

postsecondary outcomes are not reported by category of disability.

Purpose

The purpose of this study was to identify individual characteristics and school experiences of youth with SED, that may influence their postsecondary employment status. The data base that was examined is a subset of the larger data base, including all disability categories, developed by SRI International (Wagner et al., 1989). The data base and supporting documentation (Valdes, 1990) have been made available to the public for further analyses in specific areas of interest.

Significance

The NLTS was developed through a contract with the USDE as a result of a 1983 Congressional mandate. Initial results from the NLTS have been cited in Twelfth Annual Report to Congress (USDE, 1990), in professional journals (Frank, Sitlington, & Carson, 1991; Halpern, 1990; Knitzer et al., 1990; Siegel, Robert, Waxman, & Gaylord-Ross, 1992), at professional conferences (Wagner, 1989), and in publications for educators (Behrmen, 1992; Viadero, 1992). It can be predicted that this study will continue to be utilized as a resource in policy making decisions at the federal level.

A description of the subjects in the NLTS with SED provides an opportunity to identify the characteristics of the students selected. An analysis of factors influencing employment status allows comparison to the total population, and any interactions that might be unique to youth with SED. There is limited research specific to the postsecondary outcomes of youth with SED. This study, as well as the others presently available (Frank et al., 1991; Neel et al., 1988) utilizes a larger data base. Information from the NLTS subset of youth with SED may be helpful in determining directions for future research.

Limitations

Limitations of this study are related to the nature of qualitative research. Findings are limited by the process of data collection and subsequent statistical analyses (Kerlinger, 1986).

There are limitations to the study that are related to the methods by which data were obtained, specifically, the interview format and collection methods. The first consideration is the parent interview format; it should be recognized that the accuracy of the parent interview is dependent upon the candor of the parent answering the question. The second consideration is the collection of data from school records, the accuracy of which is dependent upon the skill of the individual performing the task. The final consideration is the sampling of schools by survey

format in order to obtain program information, which is, again dependent on the knowledge of the staff completing the survey.

There are limitations to this study that result from missing data. Missing survey values related to identifying characteristics, such as age, result in failure to include some subjects in the analyses. Additionally, variables with a low rate of response (i.e., high frequency of missing values) result in reduced effectiveness of the statistical analysis.

The limitations of the analyses of data should be noted. The results of the analysis provide possible indicators of postsecondary outcomes, and not predictors. In order to analyze multiple factors, variables were assigned a value which may result in the loss of discriminating information.

Definition of Terms

Serious Emotional Disturbance

The term, "seriously emotionally disturbed" (SED) is the label used in the 1975 Education for the Handicapped Act (P.L. 94-142). This label continues to be used at the federal level, as demonstrated in the 1990 IDEA regulations referring to "children and youth with serious emotional disturbance" (Federal Register, October, 1990).

The federal definition describes "seriously emotionally disturbed" as a condition that includes (a) an inability to

learn which cannot be explained by intellectual, sensory, or health factors; (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) inappropriate types of behavior or feelings under normal circumstances; (d) a general pervasive mood of unhappiness or depression; or (e) a tendency to develop physical symptoms or fears associated with personal or school problems (Federal Register, August, 1977).

The label "SED" was used in this document so as to be consistent with the federal definition and the NLTS. It is recognized that there is some controversy in the field in regard to labels and definitions for this population (Council for Children with Behavioral Disorders, 1990), and therefore, the labels used in the literature review remain consistent with that used by the authors of a particular study.

Exiters

All means of leaving the educational system are encompassed by the term "exiters" (Wagner et al., 1991). This means the student may have remained in school until graduation by diploma or certificate, or may have aged out (reached the maximum allowable age for services). In addition, this term includes students who have dropped out of school, been expelled, or left for undetermined reasons.

Follow-up

Follow-up studies collect information at one point in time (Halpern, 1990). They are considered cross-sectional if a random selection of the targeted population takes place.

Follow-along

Follow-along studies are identified by a series of data collection points that take place over an extended period of time, making the study longitudinal in nature (Halpern, 1990).

Postsecondary Outcomes

Activities related to community adjustment engaged in by students who have exited the school system are considered postsecondary outcomes. Transition is described as an "outcome-oriented process" (Federal Register, October, 1990). These outcomes include employment, education, independent living, and social adjustment.

Research Questions

The variables used for this study are those selected for use in the NLTS. These variables were hypothesized to have either a direct or indirect effect on postsecondary employment.

The following research questions related to postsecondary employment of youth with SED who were out of high school, age 16 or older, and not institutionalized have been addressed:

1. What are the (a) demographics, (b) disability characteristics, (c) household and community characteristics, (d) youth social behaviors and time out of school, (e) means of school exit, and (f) school programs/services of the youth with SED?

2. How are the (a) demographics, (b) disability characteristics, (c) household and community characteristics, and (d) youth social behaviors and time out of school, related to postsecondary employment outcomes?

3. How are the (a) means of school exit (i.e., graduate vs. drop out), and (b) school programs/services, related to postsecondary employment outcomes?

CHAPTER II

LITERATURE REVIEW

A review of the literature was conducted that included studies of postsecondary outcomes for former special education students in the 1930s through 1991. Data bases searched include those available from Education Resources Information Clearinghouse (ERIC), and the National Rehabilitation Information Center (NARIC). Additional sources included Current Index to Journals in Education (CIJE) and Dissertation Abstracts International (DAI). Finally, a hand search of journals such as Career Development for Exceptional Individuals (CDEI) and Behavioral Disorders provided current studies and articles.

The search was limited to studies and related literature. The descriptors utilized were (a) follow-up, (b) follow-along, and (c) longitudinal. Subjects must have received special education while in school. Related literature included critiques of earlier studies and recommendations for future studies.

Overview of the Review

Studies developed for the purpose of attempting to determine the success of special education students after leaving school have been evolving for the past 60 years.

These follow-up studies have common methods for obtaining information about the postschool adjustment of individuals with disabilities. Data collection usually includes interviews and/or questionnaires, with information being provided by former students and/or parents.

The history of follow-up studies provides an illustration of how the methodology of research is influenced by the findings and recommendations of research that precede it. Follow-up studies, additionally, reflect the changing philosophy in the field of special education, as demonstrated by the change in emphasis from school performance to community integration and quality of life.

There was a marked change in the variety of disability groups studied, beginning in the early 1980s. While studies prior to that time focused on former students who had been identified as mildly mentally retarded, studies published after 1980 are more comprehensive (i.e., populations sampled include individuals who are learning disabled, emotionally disturbed, and physically or perceptually disabled).

There are basic weaknesses recognized in the methodology of the follow-up study as a result of the qualitative nature of the approach (Mithaug & Horiuchi, 1983). It is, however, the most practical method available for identifying factors that influence postsecondary outcomes for individuals with disabilities. Follow-up

studies fall in the domain of behavioral, nonexperimental research (Kerlinger, 1986).

Follow-Up Studies Prior to 1980

Follow-up studies that surveyed the employment status of special education graduates first appeared in the literature in the middle 1930s. These studies compared the employment of former students with mental retardation in special classes to those who had been in regular education (Baller, 1936; Fairbanks, 1933). Results indicated that the students with mental retardation were not experiencing financial independence comparable to their nondisabled peers.

Studies in the 1950s and 1960s were conducted primarily with subjects who had been identified as educable mentally retarded (EMR). The studies of this period focused upon employment status (Bobroff, 1955; Carriker, 1955; Dinger, 1961), with reported employment rates as high as 92% (Bobroff, 1955). Peterson and Smith (1960) found that the majority of the subjects in their study were in jobs considered semi-skilled or unskilled.

In the 1970s, follow-up studies continued to focus on subjects who were school graduates diagnosed as EMR, with the exception of a study that explored employment of graduates with hearing impairments (Powers & Lewis, 1976). The findings of the studies conducted during this period indicated that special education graduates who were EMR had

employment rates that averaged 80%, but those who were working usually received low wages that placed them at or below the poverty level (Dinger, 1973; Gozoli, 1972; Titus & Travis, 1975). Several studies included an investigation of residential outcomes for this population, and it was found that about half of the subjects were living with their parents (Coonley, 1980; Gozoli, 1972).

Several studies during the 1970s attempted to determine the influence of school programming on employment status. Collister (1975) found no significant differences in outcomes for students with mild and moderate mental retardation who received services in a special school versus a school where mainstreaming occurred. Findings from other studies (Boyce & Elzey, 1978; Coonley, 1980; Dinger, 1973; Halpern, 1973) indicated an advantage for students who participated in vocational training and work study programs. Dinger (1973) found that female special education students were less well prepared for postsecondary employment by school training than were males.

Scope of the Studies

Follow-up studies during the 50 year period prior to 1980 were usually confined to a school district or other limited geographical region (e.g., several school districts). Two exceptions to this limitation were statewide follow-up studies in Oregon and Texas (Halpern, 1973; Strickland & Arrell, 1967).

Follow-up Studies 1980 to 1991

In the mid-1980s follow-up studies began to survey a more diverse population. These studies can be classified into three major categories, based upon the make-up of the sample utilized. The first category of studies attempted to include all major disability groups in the sample, for example, those identified as having mild and moderate mental retardation, learning disabilities, emotional disturbance, and physical or sensory impairments (Edgar & Levine, 1987; Gill, 1984; Mithaug, Horiuchi, & Fanning, 1985; Sitlington, 1986). A second group of follow-up studies explored outcomes for a selected group of disabilities, such as those with mild handicaps (Benz & Halpern, 1987; Fardig, Algozzine, Schwartz, Hensel, & Westling, 1985; Neubert, Tilson, & Ianacone, 1989). A third group of studies focused on postsecondary outcomes for specific populations, such as the students with mental retardation (Wehman, Kregel, & Seyfarth, 1985), learning disabilities (Cobb & Crump, 1984; Humes & Brammer, 1985; Levine, Zigmond, & Birch, 1985; Shapiro & Lentz, 1991; Zigmond & Thornton, 1985), or emotional disturbance (Frank, Sitlington, & Carson, 1991; Neel, Meadows, Levine, & Edgar, 1988).

Scope of the Studies

A follow-up study conducted for the Association for Children with Learning Disabilities (1982) was the only study conducted during this period with a nationwide sample.

Several studies were conducted with a statewide sample (Hasazi, Gordon, & Roe, 1985; Mithaug et al., 1985; Sitlington, 1986), with the remainder being regional or local within the state.

Findings of Selected Studies

The results of several studies published in the mid-1980s influenced subsequent research. Two of these studies were statewide (Vermont and Colorado), while the third included 11 school districts (Washington).

Vermont Statewide Follow-Up Study. The statewide follow-up study reported by Hasazi et al. (1985) included 462 students with disabilities who graduated, dropped out, or aged out of high school during a 4 year period. Subjects were identified as mildly disabled, including learning disabled, emotionally disturbed, and mildly mentally retarded. Survey instruments included an interview with the former student or parent, and information from school records. Data were collected over a two-year period in order to determine how employment status varied over time. The employment status of subjects was explored by identifying the type of job held, hours worked per week, and wages. Factors thought to relate to employment status that were investigated included school experiences such as means of exit (i.e., graduate vs. dropout), vocational training, and holding a job during school. In addition, information concerning the use of adult service agencies in seeking a job

was collected. Other postsecondary outcomes explored were participation in postsecondary education and the number of subjects living independently.

The results of the Vermont study were reported for the total population rather than individual disability groups. The major findings of this study were that those who graduated and worked at summer or part-time jobs, and participated in vocational education were more likely to be employed as adults. Students appeared to find jobs on their own or through family networks, and seldom accessed state vocational services. The majority of the subjects were living with their parents.

Colorado Statewide Follow-Up Study. The subjects of the Colorado follow-up study reported by Mithaug et al. (1985) were special education students who had graduated during a two year period. Disability categories included 234 subjects who were identified in the categories of mental retardation, perceptual/communication disorder, emotionally/behaviorally disturbed, and physical disability. The authors of the report noted that the sample was underrepresented in the emotionally/behaviorally disturbed category (perhaps due to failure to complete school), and overrepresented in the category of physical disability. Data were collected by means of a single student interview and school records.

The purpose of this study was to collect information about school programs and experiences, and relate that information to employment status, participation in postsecondary education and community adjustment. There was an attempt in this study to determine which school experiences were perceived as helpful to later postsecondary adjustment by the subjects.

The results of the study were reported for the total population sampled, rather than for individual disability categories (Mithaug et al., 1985). This follow-up study reported high unemployment and low wages for the participants. Almost 40% of the subjects participated in postsecondary education or vocational/technical training. Many of the subjects were found to be socially inactive and living at home. Subjects reported that special education and vocational education were more useful than regular education in preparing them for adult life.

Washington State Longitudinal Study. The results of an earlier follow-up study (Edgar, 1987) prompted researchers in Washington to initiate a longitudinal study of postsecondary adjustment of 1067 special education students who had graduated or aged out of school (Edgar & Levine, 1987; Edgar, Levine, Levine, & Dubey, 1988). In addition to information gained from school records, telephone interviews were used to gather information about the changing status of the subjects at 6 month intervals for a 30 month period.

This study included a small cohort group of students from regular education, the criteria being that they were not participating in a college preparatory program.

This study was developed to provide information concerning the number of former students employed, the number participating in postsecondary education, and the percentage who were not participating in either activity, and identified as unengaged. Additional data were collected to determine the rate of independent living.

Findings from this study were presented by individual disability group. The study was longitudinal, with data collection points at regular intervals ranging from 6 to 30 months after leaving school. Changes over time were identified, including an increased employment rate for subjects with mild mental retardation, and a decreased employment rate for subjects with behavioral disorders. Participation in postsecondary education ranged from a high of 58% (n=57) for students with sensory impairments to a low of 23% (n=52) for those with behavioral disorders.

Initial analysis of the data collected from the Washington schools prompted researchers to explore the apparent loss of special education students that occurred during secondary school (Edgar, 1987). It was found that the learning disabled/behavior disordered students in the study had a dropped out of school at a rate of 34% (n=275) as compared to a rate of 18% (n=85) for all other

disability groups, combined. The data indicated that LD/BD dropouts were found to have lower employment rates, lower participation in postsecondary education, and were more likely to be unengaged (i.e., no reported formal activity).

Follow-Up Studies of Students with Serious Emotional Disturbance

The identification of dissimilar outcome statistics for disability categories prompted the recommendation that findings be reported by category (Edgar, 1985). Studies that present follow-up data, specifically for youth with SED, have been in the form of substudies of larger studies (Frank et al., 1991; Neel et al., 1988).

SED Youth from the Washington Study

An analysis of a subgroup of students with SED from the previously cited Washington study of graduates and age outs (Edgar & Levine, 1987) was conducted to gain more specific information about this disability group. The results of this analysis were reported by Neel et al. (1988). Statistics on students with SED were compared to those of a cohort of nondisabled students who had participated in vocational programs when in secondary school.

Outcomes and means of achieving those outcomes were reported for the 160 former special education students with SED. It was found that 60% of the youth were employed and 17% were participating in postsecondary education. Parents

reported that 58% of the youth were still living at home. Limited access to adult services was found, with only 4% of the youth with SED using an agency to find a job, and only 1% obtaining mental health services.

Comparison of employment rates of youth with SED to the cohort sample was of questionable value. Significantly more of the nondisabled cohorts were attending college or a vocational/technical school.

SED Youth from the Iowa Study

Information about the adjustment of 130 graduates and 70 drop-outs with SED was collected as a part of a statewide follow-up study, and reported by Frank et al. (1991). The two groups (i.e., graduates and dropouts) were compared on a variety of factors related to employment and independent living. In addition, data were reported for males and females in both groups. Males outnumbered females in the group that had graduated (72% male, 28% female), and in the group that dropped out of school (77% male, 33% female).

Graduates had an employment rate of 58% (full or part-time), as compared to an employment rate of 30% for drop-outs. The majority of subjects in both groups (i.e., graduates and drop-outs) worked in jobs that would be classified as labor or service. Males outearned females in both groups. Subjects most frequently reported that they had secured their jobs through family and friends, or on

their own. Dropouts reported that personal problems were the primary reason they had left school.

Developing a Model

In an analysis of follow-up and follow-along studies conducted since 1975, Halpern (1990) noted inconsistencies that preclude (a) comparison of outcome statistics, (b) generalization to other populations, and (c) replication in future research. In order to provide information that can be interpreted and utilized by practitioners, Halpern advocates that studies of postsecondary outcomes follow a common format.

Development of a Model

It is recommended that a research model be developed that is based on the domains of community adjustment addressed in transition (i.e., employment, postsecondary education, and personal/social adjustment). Specific research questions provide the rationale for the development of data collection techniques and instruments.

Data Collection

Most data for studies of postsecondary outcomes have been collected at some point after students have exited school. Halpern suggests that the collection of school data is likely to be more accurate if conducted while the student/subject is still in school. Subsequently, data should be collected at the time of leaving school and at regular intervals thereafter. This method of data

collection is considered longitudinal, and therefore the studies are labeled "follow-along".

Methods for Collecting Data

School records and interviews appear to be the most efficient method for collecting data. While personal interviews are recommended as a superior source of information, the telephone interview is usually more cost effective.

Defining Variables

Variables used in studies need to be well defined. Information related to the measurement of the variables permits later replication of the study.

Data for Determining Future Directions:

The National Longitudinal Transition Study

The National Longitudinal Transition Study (NLTS) meets the criteria for (a) development of model, (b) data collection, (c) survey instruments, and (d) variable definition (Halpern, 1990). Data collection for the 5 year study was initiated in 1987 when school records were reviewed for students who had been 13 to 21 years old during the 1985-1986 school year (Wagner et al., 1989).

Overview of the Study

Postsecondary outcomes were first identified in an analysis of information collected about students who had exited the schools prior to 1987. There were approximately 1,200 exiters of all disabilities in this initial group.

Information that was collected for all students included individual characteristics and experiences (e.g., gender, social activities), family and community characteristics (e.g., income, urban vs. rural), and school experiences (e.g., type of school, work experience). Postsecondary outcomes included in the NLTS are employment, postsecondary education, social activities, and independence.

Descriptive analysis provided information about school exiters in specific disability groups. Multivariate analysis identified which variables influence postsecondary outcomes (i.e., employment) for all exiters with disabilities.

Employment Status of SED Youth Out of School

Interviews with parents and students provided information about the employment status of youth with SED one to two years after they had exited school (Valdes, Williamson, & Wagner, 1990). The employment rate for students who graduate was 59% (n=133), and that for students who drop out was 39% (n=115). Males were found to have a higher employment rate at 52% (n=215), than females at 26% (n=70). When comparing employment rates for various age groups, of those ages 16 to 18, 48% (n=90) were employed; ages 19 to 20, 49.6% (n=108) were employed; and of those 21 and older, 40% (n=66) were employed.

Employed Youth: Hours, Tenure, and Income

Of the out-of-school youth with SED who were employed (n=137), approximately 50% worked 35 or more hours per week. In response to a question regarding time on the job, 52% of those employed indicated that they had held their current job for a period of two months or less. There were 47.6% of this disability group surveyed who earned at or below minimum wage.

Comparison of Employment Status of LD and SED Youth

Although data for students with SED and LD subjects in the NLTS are sometimes combined for reporting purposes (Wagner, 1989) the two groups exhibit differences in postsecondary community adjustment. Differences in employment status were identified in the study.

According to the NLTS, when compared to their peers with LD, youth with SED in the study experienced (a) higher unemployment, (b) more part-time work, and (c) lower wages. While the employment rate for youth with LD increased with age from 16 to 21, it decreased for youth with SED.

Identification of Factors Influencing Employment

A multivariate analysis of employment factors was utilized in the NLTS to identify the likelihood of employment for each category of disability. The analysis also identified the contribution of various factors to postsecondary employment for the general population (i.e., aggregated disability categories).

Disability Characteristics. School exiters who were visually impaired, deaf, or orthopedically impaired were least likely to be employed. Functional skills were determined to be related to employment.

Individual, Family, and Community Characteristics. Males were more likely to be employed than females. It was found that the unemployment rate of the community was a significant factor in determining the likelihood of employment, and youth residing in suburban areas were more likely to be employed than youth residing in urban or rural areas.

Youth Behaviors. Graduating from school was a significant predictor of employment. Those who exited school by aging out were less likely to be employed.

School Factors. Vocational education and work experience were found to be positively related to postsecondary employment. Time in regular education (mainstreaming) was not found to be influential in determining future employment status.

Data Collection for the NLTS

Follow-along data collection for the NLTS was conducted in 1989 in a substudy of selected disability groups. A report of the findings of this study was the report of 1987 data collection results (Wagner et al., 1991). In addition, data were extrapolated for topical reports (Wagner & Cox, 1990).

Subsequent data collection for the total population will be collected during 1991, with results projected to be available in 1992. This will complete the five year study conducted by SRI International, commissioned by the U.S. Department of Education.

CHAPTER III

METHODOLOGY AND PROCEDURE

This study of youth with serious emotional disturbance (SED) utilized the information that was contained in a larger data base. The original data base was developed to be nationally representative of youth with disabilities, and has been made available to the public for further analyses. Access to the data and related documentation was obtained through the Department of Innovation and Development, Office of Special Education Programs, U.S. Department of Education and SRI International.

The National Longitudinal Transition Study:

Subjects and Instrumentation

In 1985, the U.S. Department of Education contracted with SRI International to conduct a nationwide, five-year longitudinal study of secondary school-aged students identified as disabled according to federal definitions, and receiving special education services. The purpose of the study was to determine the outcomes for special education students once they leave school, and attempt to identify school experiences that improve those outcomes.

The model for the National Longitudinal Transition Study (NLTS) is based on previous research. After

developing and testing data collection instruments, and selecting a sample (Wagner, Jay, Fairweather, & Stearns, 1987), staff at SRI International began collecting data in 1987 for the NLTS. Data collection continued through 1991; a report of findings from the first major survey effort conducted in 1987 was published in 1991 (Wagner, et al., 1991) and released in February, 1992. A second major report is to be developed based upon the 1991 survey information.

NLTS Sample Selection

The NLTS utilized a sample of approximately 8,000 students. Students selected for the study were youth receiving special education services who were 13-21 years of age in the 1985-1986 school year.

In developing the sample, 450 school districts that were providing services for students with disabilities were randomly selected. The school districts were stratified by geographic region, income level, and size. In addition, there was a random selection of subjects from 80 special schools serving secondary school students. The final sample was made up of approximately 300 school districts and 20 special schools.

Students were selected from the school districts and special schools based on random selection stratified by age groups within each disability category. The age groups used were 13 to 15, 16 to 18, and over 18.

Of the more than 12,000 students initially selected for the sample, approximately one-third could not be contacted for a telephone survey. The 8,000 subject sample represents those students for whom the school provided a phone number and address, and were subsequently contacted.

Instrumentation and Data Collection

Instruments were developed and field tested by staff at SRI International during the first two years of the contract. Information about students was obtained from student records, a school survey, and a parents/guardian survey. Multiple data sources provided an opportunity to determine the accuracy of responses.

School Record Abstracts. School records for the subject's most recent year in secondary school were used. Information gathered included (a) IQ, (b) school placement, (c) attendance, (d) courses completed, (e) grades, and (f) related services. Forms were completed by school personnel.

School Program Survey. Schools attended by subjects of the study were surveyed for information related to (a) services provided, (b) school demographics, and (c) staffing. Questionnaires were completed by school personnel; non-respondent schools were telephoned for information.

The Parent/Guardian Survey. Telephone interviews were used in the summer and fall of 1987 to gather information concerning (a) disability and characteristics, (b) family

background, (c) school services and achievement, (d) employment, and (e) community integration. Parents who could not be interviewed by phone were contacted for a personal interview. A short questionnaire was mailed to those parents who could not be contacted by phone, or personally interviewed.

Subjects with Serious Emotional Disturbance:

A Secondary Analysis of Variables Related
to Employment Outcomes

The secondary analysis of the NLTS database focuses, specifically, on the influence of individual and school factors on the postsecondary employment of youth with SED. The statistical analyses utilized in the NLTS provided the method which has been used in this secondary analysis of youth with SED.

Research Questions

For the analysis, three research questions have been delineated. The first research question will be addressed through descriptive analyses, and the second and third by means of multivariate analysis.

1. What are the (a) demographics, (b) disability characteristics, (c) household and community characteristics, (d) youth social behaviors and time out of school, (e) means of school exit, and (f) school programs/services of the youth with SED?

2. How are the (a) demographics, (b) disability characteristics, (c) household and community characteristics, and (d) youth social behaviors and time out of school, related to postsecondary employment outcomes?

3. How are the (a) means of school exit (i.e., graduate vs. drop out), and (b) school programs/services related to postsecondary employment outcomes?

Sample Selection of Youth with SED

Subjects selected for the SED subset in the secondary analysis met the criteria listed below, based on information accessed in the school district data, student abstracts, and 1987 parent survey. The youth

1. were identified as SED.
2. were 16 years of age or older.
3. had exited high school.
4. were not institutionalized.

Disability category and age were determined from identifying data provided by the subject's school district. Exit information and residential status were identified from responses to The Parent/Guardian Survey.

Sample Size

The NLTS utilized a sample of approximately 8,000 subjects, of which 10% were identified as SED. For the multivariate analysis of employment status, 1,271 subjects of all disabilities were identified. The identification of subjects that met the criteria established for the secondary

analysis of youth with SED resulted in a subset of 263 observations.

Procedures for Data Analysis

The descriptive statistics obtained were unique to the subset of subjects with SED who meet the criteria of the analysis, and, therefore, provide information that differs somewhat from the findings presented in the NLTS reports. Likewise, the multivariate analysis was conducted for this single disability group.

Descriptive Analyses. Descriptive findings are reported for the school exiters with SED. These findings include individual, family, and community characteristics; school experiences and programs. Findings are limited to the subjects with SED identified (i.e., school exiter, over 16 years of age, non-institutionalized) at the time of the 1987 Parent/Guardian Survey.

Multivariate Analyses. A multivariate analysis provides an indication of unique effects of each variable on outcomes, in this instance, the employment status of youth with disabilities. Such an analysis permits an estimation of the size and direction of the effect for multiple factors (Aldrich & Nelson, 1984). Logistic regression, a nonlinear probability model, is an appropriate statistical procedure for this data as it regresses a dichotomous dependent variable on a set of independent variables (Aldrich & Nelson, 1984; Fox, 1984).

The dichotomous dependent variable for the analysis is identified as full-time or part-time competitive employment vs. unemployment or other forms of engagement (e.g., sheltered work, work study, volunteer work). The purpose of the logistic regression is to determine the relationships of the various independent variables (see Table 1) to the employment outcome.

Conducting the secondary multivariate analysis limited to subjects with SED (n=263) resulted in a smaller sample than the NLTS analysis of the total group (n=1,271). Due to this smaller sample size, modifications were made in the secondary analysis in order to reduce the loss of observations and information.

In determining the frequency of responses for descriptive purposes, variables were found to vary in the rate of response. Missing values cause a reduction in the sample size used in the logistic regression; the presence of a missing value results in a deletion of the observation from the analysis in the statistical program utilized (SAS Institute Inc., 1989). In order to maintain as many observations in the analysis as possible, only those variables with a response rate of at least 80% (a minimum n of 210) were used in the analysis of employment outcomes for youth with SED. The variables failing to meet this criterion are identified in Table 2.

Table 1

Variables Hypothesized to Influence Postsecondary Employment

Category	Variable
Youth Demographics	Age
	Gender
	Ethnicity
Disability Characteristics	Functional ability
	IQ
Household Characteristics	Education of head of household
	Single vs. two-parents
Community Characteristics	Unemployment rate
	Setting (urban/suburban/rural)
Other Youth Behaviors	Frequency of seeing friends
	Group membership
	Out of school 1 to 2 years
School Exit	High school graduate
School Programs/Services ^a	Vocational education course
	Work experience
	Time mainstreamed
	Special vs. regular school

Note. Variables selected for the National Longitudinal Transition Study, SRI International.

^aSchool experiences

Table 2

Independent Variables with Less Than an 80% Response Rate

Variable	Missing Values	Reported	
		Frequency	Percent
IQ	152	111	42.2
Urbanicity Code	65	198	75.3
Work/Study Experience	156	107	40.7
Time in Regular Education	123	140	53.2
Special vs Regular School	59	204	77.6

While some of the dichotomous variables used in the NLTS logistic regression represent the total sample of youth with disabilities, others represent a portion of the sample (e.g., age 18 vs. age 20). In order to retain as many observations as possible in the analysis, variables that did not represent the total sample of SED youth have been revised to accommodate all observations (see Table 3). The logistic regression was run with dichotomous independent variables coded 0 or 1 to simplify the interpretation of results (Hosmer & Lemeshow, 1989).

Definition of Variables

The variables in the NLTS were created based upon responses to school district and parent/guardian responses to survey questions. The use of a dichotomous dependent variable and a series of dichotomous independent variables

Table 3

Revised Dichotomous Variables for Use in Logistic Regression

Variable	Dichotomy
<hr/>	
NLTS Analysis	
Age	18 vs. 20
Functional Ability	12 vs. 16
Unemployment Rate	5% vs. 10%
Seeing Friends	once a week vs. 4 or 5 times a week
School Exit	dropout vs. graduate
SED Analysis	
Age	16-18 vs. 19-21
Functional Ability	2-12 vs. 13-16
Unemployment Rate	7% or less vs. greater than 7%
Seeing Friends	once or less vs. 2 or more times weekly
School Exit	dropout vs. graduate/suspended/age out

necessitates the clarification of how these variables were derived, and the attributes contrasted. Modifications in the use of the variables for the secondary analysis are noted.

Employment. Responses in the Parent/Guardian Survey were used to determine whether the youth were competitively employed. Work can be full-time (i.e., more than 35 hours per week) or part-time (hours per week less than 35 or undetermined). Those youth who were engaged in work study,

performed tasks around the home, or were working in a sheltered setting, were not considered to be competitively employed.

Age. The ages of the youth were determined from district data that provided the age at the time of The Parent/Guardian Survey. While 18 and 20 year olds were selected for comparison in the NLTS, for the secondary multivariate analysis all observations were included by comparing those 18 and under (the traditional school age) to those subjects over 18.

Gender. The Parent/Guardian Survey provides the gender of the youth.

Ethnicity. The youth's ethnic background is identified in The Parent/Guardian Survey. The dichotomous variable used in the NLTS is (a) minority, which includes the categories of Black, Hispanic, American Indian, Alaskan Native, or Other; and (b) nonminority, which includes youth identified as being White, Asian, or Pacific Islander. A tendency for Asian students to outperform other minorities was the rationale for including that group as nonminority in the NLTS multivariate analysis. Due to the small number of youth with SED (n=1) in the Asian/Pacific Islander category, this ethnic category was combined with American Indian/Alaskan Native and Others.

Functional Ability. Parents rated how well their children could perform the task of using a telephone,

telling time, understanding common signs, and counting change. A 4-point scale was used, with 1 being the lowest score. The Functional Ability Score was the sum of scores in the 4 task areas. Ability scores were rated as high 15 or 16, medium 9 to 14, and low 4 to 8. This variable was modified for the secondary multivariate analysis. Rather than contrast two specific scores as done in the NLTS, subjects receiving scores below 13 are contrasted to those with functional ability scores above 13.

Education of Head of Household. Responses to the parent surveys identified the level of education attained by the head of the household. Categories were combined for the NLTS logistic regression into (a) dropout (i.e., 11th grade or less, and (b) high school graduate (i.e., high school diploma, college degree).

Number of Parents in Household. The parent/guardian responses were used to identify households with single parents and two-parents.

Unemployment Rate. The Bureau of Statistics unemployment rate for the county in which the youth attended secondary school was used in the NLTS. Rather than use the dichotomous variable contrasting two specific rates (i.e., 5 vs. 10), in order to include all observations in the secondary analysis, the variable dichotomy was set based on the mean unemployment rate (7%) of the sample.

Frequency of Seeing Friends. Parents were asked how often their children got together with friends during the week. This variable was modified for the logistic regression with SED youth, the dichotomy contrasting the employment outcomes of those seeing friends less than twice a week to those seeing friends two or more times a week.

Group Membership. A yes or no response was elicited from parents by asking whether their child had belonged to a community group (e.g., sports team, church group, band) in the last 12 months.

Time Out of School. Out of school youth were classified as either being out from 1 to 2 years or less than 1 year.

High School Exit. Students who graduated from high school were compared to students who dropped out (i.e., left voluntarily) in the NLTS. The dichotomous variable was modified slightly for the secondary analysis by contrasting graduation to all other means of school exit, therefore adding youth who had been expelled, suspended, or had aged out of school.

Vocational Education. The School Record Abstract was used to determine if vocational education was taken by the youth while in school. Those who had taken at least one occupationally oriented vocational course (not including life skills training or home economics) were compared to

those who had no record of taking a vocational education course.

CHAPTER IV

RESULTS

Subjects were selected from the National Longitudinal Transition Study (NLTS) to create a subset of the approximately 8,000 youth, based on the criteria used in the NLTS multivariate analysis of employment outcomes. These criteria were that the youth be (a) out of school, (b) 16 years of age or older, and (c) not institutionalized. In addition, for the purposes of a multivariate analysis of a specific disability group, only youth who were identified by the school districts as seriously emotionally disturbed (SED) were included in the subset. Survey information was obtained from school records, school surveys, and parent/guardian surveys.

The first step in developing a subset of subjects was to select those youth who were identified as SED and 16 years of age or older. This procedure resulted in a pool of 689 subjects. The second step in the development of the subset was to select from this pool only youth who were out of school. Of the 689 subjects, 313 were still in school, and 358 were out of school; data were not available for 18 subjects. In the final step, youth were eliminated who were institutionalized, or for whom residential information was

missing, resulting in a final subset of 263 subjects who met all of the selection criteria.

Descriptive Findings

Due to the nature of the surveys conducted in the NLTS, a nonresponse to a particular question or insufficient information in school records resulted in missing values. Therefore, the number of observations represented vary from item to item.

Youth Demographics

Information related to age, gender, and ethnicity was available for all 263 youth in the subset. The mean age of out-of-school youth, age 16 and older, was 19.3 (SD 1.6), with a range of 16 to 23 years old. Approximately half of the youth were 18 and 19 years of age. Males outnumbered females by a ratio of 3 to 1 (i.e., M=76.4%; F=23.6%). An analysis of ethnicity (see Table 4) showed that most of the youth were identified as White (72.6%) or Black (21.3%), with Hispanics (3.4%) and other minorities (2.7%) making up a relatively small portion of the total population.

Disability Characteristics

School district data were used to identify the 263 youth in the subset. Disability designation for this category allowed the district to describe the severity of the disability by assigning the SED subject to one of four categories. Most responses (85.9%) indicated that the district was unable to determine the severity of the

Table 4

Distribution of Out-of-School Youth by Age and Ethnicity

Age Group	Ethnicity							
	White		Black		Hispanic		Other	
	n	%	n	%	n	%	n	%
16 to 18	66	34.6	20	35.6	2	22.2	3	42.9
19 to 20	78	40.8	18	32.2	5	55.6	3	42.9
21 to 23	47	24.6	18	32.2	2	22.2	1	14.2
Total	191	100.0	56	100.0	7	100.0	7	100.0

disability (i.e., severity unknown), while others categorized the disability as mild (4.6%), moderate (2.3%) or severe (7.2%).

The functional ability score is a measure that was developed for the parent survey, and was intended to measure the youth's ability to perform certain functional tasks (i.e., telephone, count money, tell time, and read). Scores ranged from a low of 4 to a high of 16. Performance was determined by the scores identified as, low (4 to 8), medium (9 to 14), and high (15 or 16). The out-of-school youth with SED (n=244) performed in the high range, with 73% scoring 15 or 16 points. The mean score of functional ability scored by youth with SED was 14.5 (SD=2.1).

IQ scores were reported for 42% (n=111) of the youth. The mean IQ was 87.1 (SD=14.3) with a range from 42 to 128. Scores below 70 were reported for 8% of the youth.

Of the youth with SED (n=245), 50.3% of the males, and 25.9% of the females were identified as having demonstrated negative behaviors or being "bad actors" (i.e., had been suspended or expelled, had left school because of behavior, had been fired from a job, had been arrested). By ethnic distribution, 51% (n=47) of the Black youth, 43.7% (183) of the White youth, and 25.0% (n=8) of the Hispanic youth were identified as "bad actors". The arrest rate for these out-of-school youth (n=251) was 31.1%.

Household Characteristics

Responses to the parent survey (n=249) identified 60.6% as two-parent households, the remaining 39.4% were one-parent households. Parents (n=232) reported their annual income; 24.6% earned less than \$12,000, 18.1% earned between \$12,000 and \$20,000, 31.5% earned between \$20,000 and \$38,000, and the remaining 25.8% reported incomes over \$38,000. Parents (n=243) identified the highest level of education attained; 34.6% had dropped out of school, 32.5% had received a high school diploma, and the remaining 32.9% had attended college or received a degree.

Community Characteristics

The type of community in which the youth (n=198) resided was determined by identifying the school district

attended, and matching it to the urbanicity code for that district. Most of the youth resided in the suburbs (51.5%), while 26.3% lived in urban areas and 22.2% lived in areas considered rural. According to data from the Bureau of Statistics, the unemployment rates for January through June of 1987 in the communities in which the subjects (n=263) resided ranged from 2.6 to 19.6, with a mean unemployment rate of 7.0 (SD=3.1).

Other Youth Behaviors

Parents (n=247) of youth who were out of school reported that 19.8% of those youth had participated in a community group in the preceding 12 months, and 80.2% had not belonged to a community group. An additional attempt to measure social outcomes for out-of-school youth was the frequency of seeing friends, other than at work. The mean number of times youth (n=235) saw friends was 3.6 times a week (SD=1.4), with 40.4% reported to see friends 6 or 7 times a week (i.e., the upper limit of the response).

School Exit

All of the youth (n=263) had exited their school programs. Approximately half had been out of school less than a year (51%), while the others had been out for more than a year (49%).

According to parent responses (n=257), (see Table 5) the majority of the youth graduated from school (58%), while 37.7% exited schools by dropping out, suspension, or

expulsion, was attributed to 37.7% of school exits for this population. There were some youth who reached the upper limits for obtaining services from the public schools. Of the parents responding (n=80) to a question related to reasons for leaving school, 32.5% indicated their child left because he/she did not like school or was bored, 25% indicated poor grades were the reason for leaving, and 23.8% responded that their child left school because of behavioral problems. Less frequently cited reasons for leaving school were illness (6.5%), wanting or needing a job (6.5%), and getting married or being pregnant (5.0%).

Table 5

Parent Report of How Youth Exited School

Reason	Frequency	Percent
Graduated	149	58.0
Dropped Out/Left	90	35.0
Aged Out	11	4.3
Expelled/Suspended	7	2.7
Total	257	100.0

School Programs/Services

The type of school attended was identified for 207 of the youth. Special schools for children with disabilities were attended by 14% of the subjects, with the predominant

educational setting being a regular school setting with an 86% attendance rate.

Type of school program participation was reported for 140 youth, with the mean percent of time spent in regular education classes of 53.9% (SD=38.9). Approximately 25% of the youth were in self-contained classrooms, and another 25% were mainstreamed for all classes.

A 49.8% participation rate in school vocational education was reported for youth with SED (n=231). School abstracts provided information concerning the content of these vocational education classes for 107 subjects. As shown in Table 6, office occupations, construction, and work study were the classes in which the youth were most frequently enrolled while in school.

Residential Independence

Even though the youth (n=263) were out of school, 79.1% were still residing with their parents. Table 7 shows this and other living arrangements that were reported.

Community-Based Services

Parents (n=259) reported that 20.5% of their out-of-school children had received personal counseling or therapy in the 12 months prior to the survey. In responding to a survey question about vocational services, 15.6% of the parents (n=244) reported seeking or receiving services from their vocational rehabilitation agency, as shown in Table 8. The type of services youth received are reported in Table 9.

Table 6

Vocational Education Courses Taken While in School

Course ^a	Frequency	Percent
Office Occupations	27	25.2
Work Study/On-the-Job Training	24	22.4
Construction Trades	23	21.5
Machine Shop/Motor Repair	21	19.6
Pre-Vocational/Career Exploration	21	19.6
Graphic Arts/Photography	12	11.2

Note. In 47 cases, youth enrolled in more than one course.

^aOnly those courses with participation >10% are shown.

Table 7

Residential Arrangements for Out-of-School Youth

Residence	Frequency	Percent
With Parent or Guardian	208	79.1
With Spouse or Roommate	24	9.1
With Family Member or Friend	11	4.2
Supervised Group Home	8	3.0
Alone	6	2.3
Military Housing	5	1.9
Residential or Boarding School	1	0.4
Total	263	100.0

Table 8

Vocational Rehabilitation Services Accessed in the 12
Months Prior to the Parent Survey

Level	Frequency	Percent
No Involvement	206	84.4
Referral Only	7	2.9
Contact	15	6.1
Services Provided	16	6.6
Totals	244	100.0

Employment Outcomes

Responses from parents concerning activities of their out-of-school children (n=257) provided information about employment, as shown in Table 10. Using the NLTS criteria for employment, 51.8% of the youth were competitively employed, both part-time and full-time; 48.2% were not competitively employed.

Males (n=195) were employed at a rate of 56.4%, while 37.1% of the females (n=62) were employed. High school exit influenced employment, with graduates (n=147) having a 61.2% employment rate, and all other groups (n=105) employed at a rate of 39.1%.

The youth (n=142) who held paying jobs were reported to have been in that position for lengths of time that ranged

Table 9

Vocational Services Obtained by Out-of-School Youth in the 12 Months Prior to the Parent Survey

Service	Frequency	Percent Served
Interest/Ability Testing (n=255)	33	12.9
Specific Job Skill Training (n=257)	42	16.3
Basic Skill Training (n=258)	29	11.2
Career Counseling (n=255)	36	14.1
Job Search Help/Training (n=258)	29	11.2

Note. In 18 cases, the same youth had received 4 or 5 of the services.

Table 10

Employment Status of Out-of-School Youth

Status	Frequency	Percent
Competitively Employed		
Full-Time	65	25.3
Part-/Undetermined Time	68	26.5
Not Competitively Employed		
Sheltered	10	3.9
Volunteer	17	6.6
No Work Related Activity	97	37.7
Total	257	100.0

from 10 days to 4 years. Out-of-school youth with SED (n=116) earned a mean hourly wage of \$4.10 (SD=2.7), with the hourly rates ranging from a low of 10 cents to a high of twenty dollars. Hours worked by these youth (n=127) per week ranged from 2 to 60, with a mean of 32.2 hours (SD=3.1). Length of employment, wages, and hours are presented in Tables 11, 12, and 13, respectively.

Of the four youth earning \$10.00 or more per hour in wages, one was employed full-time (45 hours) and earning \$13.00 an hour. The highest hourly wage was \$20.00 earned by a youth working 2 hours a week, and two youths were reported to earn \$12.50 an hour working 5 and 10 hours weekly.

Table 11

Length of Time Employed at Job Held at Time of Survey

Time in Months	Frequency	Percent
Less than 1	20	14.1
1 to 4	60	42.3
5 to 8	18	12.6
9 to 12	22	15.5
13 to 48	22	15.5
Total	142	100.0

Table 12

Hourly Wages Earned by Part and Full-Time Competitively
Employed Youth

Hourly Income	Full-Time		Part-Time	
	Frequency	Percent	Frequency	Percent
Less than 3.35	5	7.7	8	11.8
3.35 (minimum wage)	11	16.9	16	23.5
3.36 to 5.99	25	38.5	20	29.4
6.00 to 9.99	14	21.5	4	5.9
More than 10.00	1	1.5	3	4.4
Undetermined	9	13.9	17	25.0
Total	65	100.0	68	100.0

Approximately 1 out of 5 (19.75%) of the youth who had worked (n=137) had been fired from a paid job in the past 12 months. The number of jobs held in the past year were reported for less than half (n=60) of those reported working, with as many as 5 and 6 jobs reported for 2 subjects.

Logistic Regression

The logistic regression with dichotomous independent variables resulted in the identification of variables that influenced the employment outcomes of youth with SED. The procedure of backward elimination resulted in the removal of

Table 13

Hours Worked Per Week for Part and Full-Time Competitively
Employed Youth (n=133)

Status & Hours	Frequency	Percent
Full-Time		
50+	12	18.5
35 to 49	53	81.5
Total	65	100.0
Part/Undetermined Time		
20 to 34	38	55.9
10 to 19	5	7.4
0 to 9	9	13.2
Undetermined	16	23.5
Total	68	100.0

the 9 variables listed in Table 14. The three variables retained in the model are presented in Table 15. These variables included gender, frequency of seeing friends, and method of school exit.

Gender

The coefficient for gender indicates that gender is a significant predictor of employment for youth with SED. Males were 2.19 times as likely as females to be employed.

Table 14

Backward Elimination Procedures: Dichotomous Variables

Variable	Step Removed/ DF	Residual Chi-Squared	p
Time Out of School	1	0.0089	0.9249
Vocational Education	2	0.0938	0.9542
Age	3	0.2794	0.9639
Number of Parents	4	0.5323	0.9703
Group Membership	5	0.8242	0.9755
Parent Education	6	1.4619	0.9620
Unemployment Rate	7	2.1161	0.9531
Functional Ability	8	5.1160	0.7451
Ethnicity	9	8.7227	0.4633

Note. 72 observations were deleted due to missing values.

Table 15

Analysis of Maximum Likelihood Estimates: Model Significance Level <.05

Variable	Parameter Estimate	Standard Error	Pr> Chi-Square
Intercept	0.5613	0.4349	0.1968
Gender	0.9084	0.3894	0.0197
Seeing Friends	-1.6174	0.4617	0.0005
School Exit	1.2988	0.3307	0.0001

Seeing Friends

Social activities appear to be related to employment outcomes. Youth who saw friends more than twice a week were 2.7 times more likely to be employed than those seeing friends once a week or less.

School Exit

Graduating from school was found to be related to future employment. Youth who graduated were 2.5 times more likely to be employed than those who exited by other means (i.e., dropping out, being suspended or expelled, aging out).

CHAPTER V

DISCUSSION AND RECOMMENDATIONS

A secondary analysis of employment outcomes for youth with serious emotional disturbance (SED) provided a profile of their characteristics and experiences, and how these relate to employment. Interpretation and generalization of results are limited by differences in the methodology used in developing samples and executing analyses.

Discussion

The National Longitudinal Transition Study (NLTS) provides a model for future follow-along studies. The survey instruments developed for this study provided a valuable guide for conducting outcome research. The NLTS is the first research, that is nation-wide in scope, which addresses the adjustment of special education students after leaving school. As such, it provides a valuable data base for secondary analyses.

When attempting to generalize the results of the NLTS, the nature of the sampling methods should be considered. The sample in this study represents approximately two-thirds of the initial population identified. The inclusion of these youth, who could not be surveyed due to lack of residential information, might alter findings.

The findings published in first report of the NLTS (Wagner et al., 1990) are based on data collected in 1987. At this time school records and information were recorded, and the parent/guardian surveys conducted. A 1989 substudy furnished additional information for some subjects. The 1991 survey will provide a second point of data collection for the total group, at which time the study will become longitudinal in nature.

When using results of the NLTS for purposes of comparison, it is important to identify the population being represented. For example, the group for which the statistics are given may be all youth in the study, only those who have exited school, or for both groups combined.

A secondary analysis was conducted with a subset of the NLTS sample, and was limited to out-of-school youth with serious emotional disturbance (SED), ages 16 and older, who were not institutionalized. Of specific interest were the characteristics of the youth in this subset and their employment outcomes.

The majority of the 257 youth with SED in the subset were age 18 or 19. Males outnumbered females with a ratio of 3 to 1, which is consistent with the typical distribution in the school population. The ethnic make-up of the group was approximately three-fourths White and one-fourth Black. There were fewer youth of Hispanic origin in the secondary analyses than were identified in the NLTS sample.

Little discriminating information was available from districts as to the nature or severity of the disability. Negative behaviors were more frequently indicated in males than females, somewhat more frequently in Black youth than White youth. Functional skills were rated high for this group of youth, and the mean IQ score mean was 87, with an almost 90 point range.

Most of the youth with SED resided in two parent households, and parents' educational backgrounds were fairly evenly divided among the exit options of dropping out, high school graduation, and some college. One-fourth of the households listed an income of less than \$12,000; about half of the families lived in suburban settings.

This group had almost a 60% graduation rate and 35% dropout rate; the remaining youth aged out, were suspended or expelled. The rate of dropping out is considerably lower than the 50% rate reported in the NLTS. While attending school, half of the youth were reported to have spent some time in regular education classes, while the other half were evenly divided between those who experienced complete inclusion and those who were assigned to self-contained classrooms. The influence of school vocational education classes was difficult to determine, although half of the youth were reported to take vocational education classes, the number was inflated by those taking more than one class.

About 80% of the youth with SED were still living with their parents. There was little community group participation noted for the group, but many were actively participating in social activities with their friends. Anti-social activities were noted, as demonstrated by their arrest rate of approximately 30%. Few received personal counseling or vocational services.

Results of logistic regression with dichotomous variables identified those youth characteristics and experiences that indicated an increased likelihood of postsecondary employment. For youth with SED, gender, means of school exit, and frequency of seeing friends were variables that remained in the model.

The youth who were more likely to be employed were those who were white males with high functional ability scores. Age did not appear to be a factor in employment, as the older group had only a slightly higher rate of employment than the younger group.

Youth in two parent families where the head of the household completed high school education were more likely to be employed. The unemployment rate of the community appeared to have little influence on obtaining work for these youth.

While frequency of seeing friends was found to be a significant indicator of employment, group membership was not. Those who had been out of school less than a year had

a somewhat higher rate of employment than those who had been out for a longer period of time.

High school graduation was found to be significantly related to employment. Those who participated in vocational education in high school had a slightly higher employment rate.

The school district disability designation was the criterion for identifying youth with SED for the secondary analysis. Some youth were classified in disability groups other than that specified by the school for the NLTS (e.g., those with SED with lower IQ scores were reclassified as mentally retarded). This reclassification is a factor that should be kept in mind when making comparisons of results from the secondary analysis to those of the NLTS.

The need to precisely define variables is illustrated by the possible generalization of a term such as employment. As used in the NLTS, full-time and part-time employment are differentiated, but income is not included in defining competitive employment. Therefore, when comparing the findings related to employment for the NLTS and the analysis of youth with SED, the means by which the variable is developed is an important consideration.

Deviation from the results of the original data base may also result from the use of imputed values for certain variables in the NLTS. The secondary analysis made no accommodation for missing values, which resulted in the loss

of some subjects in the development of the subset, and the elimination of five variables from the logistic regression procedure. Three of these variables were school related programming, information that is of value in identifying school experiences that influence postsecondary employment outcomes.

Finally, modification of the dichotomous variables used in the logistic regression necessitate cautious comparisons of findings. While specific values were compared in the NLTS regression analysis of employment, for the analysis of the smaller subset of youth with SED, values were grouped to approximate the comparison of the national study.

The variables identified in the logistic regression analysis as being significantly related to postsecondary outcomes were gender, frequency of seeing friends, and school exit. Other youth characteristics and experiences were found to influence employment outcomes, but were not identified as significant.

As in the NLTS analysis, males were found to be more likely to be employed than were females. This was found in early research, also, and perhaps indicates lower expectations and less emphasis on vocational preparation for girls in school. It appears that, in this age of supposed equality, the differing vocational needs continue to be overlooked. One might speculate that this tendency might be magnified in a classroom of students with SED where acting-

out males may have a monopoly on the time and energy of teachers.

Frequency of seeing friends was identified as an activity related to employment outcomes, with those youth seeing friends two or more times a week more likely to be employed than those with less frequent social interaction. It is possible, however, that employment resulted in more social interaction, rather than the more socially active youth being successful in securing employment.

Both the NLTS logistic regression analysis of all disability groups and the secondary analysis of youth with SED identified means of school exit as being significantly related to postschool employment. In the analysis of SED youth, those who graduated from school were more likely to be employed than those who exited by all other means, the most prevalent of those means being dropping out of school. Perhaps the most critical implication of this particular finding is the need to provide transition planning for these students as early as possible, most certainly by age 14. Until drop out prevention programs begin to have positive results, these early school exiters need to be assisted in the development of work related skills.

Recommendations for Future Research

The NLTS and the initial reports provide a resource for future outcome research. Many of the problems encountered with use of the data were related to the scope and magnitude

of the national study. Particular findings of the analyses of youth with SED provide potential areas to be explored.

Follow-Along Studies

The results of the NLTS illustrate the need to limit the scope and sample size of a longitudinal study in order to reduce the occurrence of missing data. Strategies for obtaining a representative sample and increasing response rate need to be developed prior to the initiation of the study.

Logistic regression is a useful procedure for developing a model that identifies variables that influence the postsecondary outcomes that can be represented in bivariate form. The characteristics and experiences that influence those outcomes may vary among disability groups, and should not be limited to those presented in the original analysis. Analyses for each of the disability groups may identify variables that are uniquely related to the disability. By increasing the probability level to .25 for model building as suggested in Applied Logistic Regression (Hosmer & Lemeshow, 1990), more variables can be included in the regression model; their influence can then be independent subjects of research.

Youth with SED

Information regarding the nature of the diagnoses within the disability group would allow the researcher to determine the influence of these differences on employment

outcomes. Those school experiences that were not included in the analysis of postsecondary outcomes for youth with SED (i.e., work experience, time mainstreamed, type of school) bear further study in order to make recommendations for programming for this population.

It is reasonable to assume that the characteristics and experiences that influence postsecondary outcomes for youth will vary among the disability groups. For example, in the analyses of youth with SED, additional information could be obtained by including those youth who were 15 years of age in the subset. Other variables, such as family income, might be related to employment outcomes for youth in this disability category.

Several of the variables found be influential in determining postsecondary employment of youth with SED require additional research in order to determine the nature of that influence. Gender differences in training, expectations, and placement strategies are needed in order to identify programs that would increase employment opportunities for females. The relationship between frequency of seeing friends and employment could be determined by targeting specific survey items to increase the understanding of this phenomenon. In examining the high rate of high school dropouts with SED, it would be valuable to know the effect early transition planning and programming on employment outcomes.

APPENDIX A
ALPHABETIC LIST OF 124 VARIABLES AND LABELS

Alphabetic List of 124 Variables and Labels

#	Variable	Label
108	A_AGEGRD	
109	A_FAILCT	
77	ABSYR	SCHOOL YEAR ABSTRACT FORM
4	AGE	AGE
67	A1B	PRIMARY DISABILITY
72	A12	MOST RECENT IQ TEST TAKEN
73	A12_YR	STUDENT GRADE LEVEL
74	A13_IQ	IQ TEST SCORE
68	A2	STUDENT GRADE LEVEL
75	A14	STUDENT STATUS AT END OF SCHOOL YEAR
76	A15	DIPLOMA/CERTIFICATE RECEIVED
78	A3A_01	ED SVCS IN SPECIAL SCHOOL FOR DISABLED
79	A3A_02	SELF-CONTAINED SPECIAL EDUCATION CLASS
80	A3A_03	ED SVCS IN REGULAR EDUCATION CLASSES
81	A3A_04	RESOURCE ROOM OR PULL-OUT SERVICES
82	A3A_05	HOSPITAL/MENTAL HEALTH FACILITY
83	A3A_06	HOMEBOUND
84	A3A_07	OTHER EDUCATIONAL SETTING
85	A3A_08	ED SVCS AT A CORRECTIONAL FACILITY
86	A3A_09	VOC ED AT A VOCATIONAL CENTER
69	A3B	SETTING WHERE STUDENT SPENT MOST TIME
87	A6A_01	VOC ED-AGRICULTURE
88	A6A_02	VOC ED-DISTRIBUTIVE EDUCATION

89	A6A_03	VOC ED-HEALTH OCCUPATIONS
90	A6A_04	VOC ED-OFFICE OCCUPATIONS
91	A6A_05	VOC ED-TECHNICAL EDUCATION
92	A6A_06	VOC ED-MACHINE SHOP, AUTO/MOTOR REPAIR
93	A6A_07	VOC ED-CONSTRUCTION TRADES
94	A6A_08	VOC ED-ELEC, ELECTRON, COMMUN, AIR COND
95	A6A_09	VOC ED-MANUFACTURING, INDUSTRIAL ARTS
96	A6A_10	VOC ED-PAINTING/INTERIOR DESIGN/DECOR
97	A6A_11	VOC ED-GRAPHIC ARTS/PRINTING/ PHOTOGRAPHY
98	A6A_12	VOC ED-FOOD SERVICES/COOK/HOSTESS
99	A6A_13	VOC ED-PERSONAL SVCS/COSMETOL/LNDRY/ CLNG
100	A6A_14	VOC ED-CUSTODIAL SERVICES/JANITOR
101	A6A_15	VOC ED-FIREMAN, LAW ENFORCE/PUB SERVICE
102	A6A_16	VOC ED-OTHER VOC ED CLASSES TAKEN
103	A6A_17	MULT-OCC/PRE-VOC/CAREER EXPLORAT'N/ETC
104	A6A_18	SHELTERED ADLT WORKSHOP/SUPPORTED EMPLMT
105	A6A_19	WORK STUDY/EXPER/ON-THE-JOB TRAINING
106	A6A_20	VOC ED-CLOTHING TEXTILES
107	A6A_21	VOC ED-CHILD CARE/NURSERY SCHOOL
70	A7A_DAYS	NBR DAYS ABSENT
71	A8	NBR DAYS SUSPENDED
115	BADACTOR	YOUTH HAS HAD NEGATIVE BEHAVIOR
114	COMPSTAT	YOUTH'S SCHOOL COMPLETION STATUS

3	DIS_1	PRIMARY DISABILITY
121	HADJOB	YOUTH HAD JOB AT SOME TIME IN PAST
1	ID	DISTRICT ID NUMBER
118	NEWVOCED	HAD VOC ED (INCL HOME EC/LIFE SKILLS)
120	NUVOCAMT	AMOUNT OF VOC ED (INCL HOME C)
111	NUVOCREG	HAS REG ED VOC ED COURSES (INCL HOME C)
112	NUVOCSPD	HAS SP ED VOC ED COURSES (INCL HOME C)
53	P_ANYJOB	YOUTH HAD ANY JOB IN THE PAST YEAR
58	P_ARREST	HAS YOUTH EVER BEEN ARRESTED
62	P_COUNT	COUNTS CHANGE WITHOUT HELP
54	P_EMPLMT	YOUTH'S EMPLOYMENT STATUS SCALE
52	P_FIRED	YOUTH HAS BEEN FIRED IN THE PAST YEAR
57	P_GROUP	BELONGED TO SCHOOL/OTHER GROUP PAST 12 M
63	P_INTEL	
30	P_JOBEVR	YOUTH HAD SOME VOCATIONAL ED (INST INCL)
20	P_LIVING	RESIDENTIAL INDEPENDENCE SCALE
51	P_PDJOB	YOUTH HAD PAID JOB IN PAST YEAR
59	P_PHONE	LOOKS UP #'S/USES PHONE W/OUT HELP
61	P_READ	READS & UNDERSTANDS COMMON SIGNS ON OWN
21	P_SKOOL	IN/OUT SCHOOL STATUS
56	P_SOCIAL	AMOUNT OF SOCIAL CONTACT YOUTH HAS
31	P_THRP12	COUNSELING/THER LAST 12 MOS (INST INC)
60	P_TIME	TELLS TIME ON ANALOG CLOCK W/OUT HELP
32	P_VRINV	YOUTH'S INVOLVEMENT WITH VR

5	PA1	SEX OF YOUTH
9	PA14	WHY YOUTH LEFT SCHOOL
10	PA15_01	LEFT BECAUSE GOT MARRIED/PREGNANT
11	PA15_02	LEFT BECAUSE POOR GRADES/NOT DOING WELL
12	PA15_03	LEFT SCHOOL BECAUSE WANTED/NEEDED A JOB
13	PA15_04	LEFT SCHOOL BECAUSE MOVES/TRANSFERRED
14	PA15_05	LEFT -DIDN'T LIKE OR BORED WITH SCHOOL
15	PA15_06	LEFT BECAUSE FRIENDS WERE DROPPING OUT
16	PA15_07	LEFT SCHOOL BECAUSE ILLNESS/DISABILITY
17	PA15_08	LEFT BECAUSE OF BEHAVIORAL PROBLEMS
18	PA15_09	DIDN'T GET INTO PROGRAM HE/SHE WANTED
19	PA15_97	LEFT BECAUSE OF OTHER REASONS
6	PA2	WHERE DOES YOUTH LIVE
7	PA8_L	AGE/GRADE WHEN STARTED GETTING SERVICES
8	PA9	YOUTH'S ETHNIC BACKGROUND
22	PB1	YOUTH'S HAD SOME VOCATIONAL EDUCATION
29	PB48	YOUTH BEEN TESTED/SERVED BY VOC REHAB
23	PB5A	HAD TESTING FOR INTERESTS/ABILITIES
24	PB5B	HAD TRAINING IN SPECIFIC JOB SKILLS
25	PB5C	TRAINING IN BASIC SKILLS NEEDED FOR WORK
26	PB5D	HAD CAREER COUNSELING IN PAST 12 MOS
27	PB5E	HAD HELP IN FINDING JOB/LEARNING TO LOOK
28	PB5F	HAD OTHER KINDS JOB TRAINING OR HELP

110	PCTREG	PCT OF HRS IN REGULAR ED CLASSES
33	PC1	YOUTH HAS WORK-STUDY JOB
40	PC10_L	HOURS PER WEEK WORKS AT JOB
49	PC10_11	HRS/WK @ PD JOBS
41	PC11	HOURS PER WEEK WORKS AT PAID JOB
42	PC12_L	LONGEST TIME YOUTH HAS HAD PAID JOB
50	PC12_17	LONGEST TIME HAD PAID JOB
43	PC13	YOUTH BEEN FIRED FROM PAID JOB PAST 12 M
44	PC14	YOUTH HAS WORKED FOR PAY PAST 12 MONTHS
45	PC15	HOW MANY PAID JOBS IN PAST 12 MONTHS
46	PC17_L	LONGEST TIME YOUTH HAS HAD PAID JOB
34	PC3	YOUTH GETS PAID FOR WORK-STUDY JOB
35	PC4	YOUTH GETS PAID FOR WORK OUTSIDE HOME/SC
36	PC5	HOW MANY PAID JOBS DOES YOUTH HAVE
37	PC7	YOUTH WORKS IN SHELTERED WORKSHOP
47	PC18	WHY YOUTH LEFT JOB
48	PC19	YOUTH DONE VOLUNTEER WORK PAST 12 MONTHS
38	PC8_L	HOW LONG HAS YOUTH HAD PAID JOB
39	PC9_P	WHAT IS YOUTH PAID FOR HIS JOB
55	PE1	YOUTH'S MARITAL STATUS
64	PG1	ONE-PARENT OR TWO-PARENT HOUSEHOLD
65	PG7	HEAD OF HOUSE'S HIGHEST GRADE COMPLETED
66	PG12	HOUSEHOLD INCOME IN 1986

113	SKOLSTAT	YOUTH'S SCHOOL STATUS
119	SPECSCH	SPECIAL SCHOOL
2	STU_ID	HANDICAPPED STUDENT ID NUMBER
123	UNEMP86	1986 UNEMPLOYMENT RATE
124	UNEMP87	1987 (JAN-JUNE) UNEMPLOYMENT RATE
122	USRC	URBAN RURAL CODE
116	VOCED	
117	VOCEDAMT	

APPENDIX B
NATIONAL LONGITUDINAL TRANSITION STUDY

National Longitudinal Transition Study

of Special Education Students:

Reports and Data

Youth with disabilities: How are they doing? The first comprehensive report from the National Longitudinal Transition Study of Special Education Students. M. Wagner et al. September 1991. 600 pp. \$40.00. (order No. 135)

The National Longitudinal Transition Study of Special Education Students: Report on procedures for the first wave of data collection (1987). M. Wagner, L. Newman, and D. Shaver, 1989 (includes data collection instruments). 280 pp. \$25.00. (Order No. 126)

The National Longitudinal Transition Study of Special Education Students: Statistical almanac, volume 3: Youth categorized as emotionally disturbed. K. Valdes, C. Williamson, and M. Wagner. July 1990. 170 pp. \$26.00.

The National Longitudinal Transition Study of Special Education Students: Data documentation. K. Valdes, 1990 (includes contents of SAS data library). 333 pp.

National Longitudinal Transition Study

Room BS136

SRI International

333 Ravenswood Avenue

Menlo Park, CA 94025

REFERENCES

- Aldrich, J. H., & Nelson, F. D. (1984). Linear probability, logit, and probit models. Beverly Hills, CA: SAGE Publications, Inc.
- Association for Children with Learning Disabilities (1982). Preliminary report of the ACLD vocational committee survey of learning disabled adults. ACLD Newsbriefs, 20-23.
- Baller, W. R. (1936). A study of the present social status of a group of adults who when they were in elementary schools were classified as mentally deficient. Genetic Psychology Monographs, 18, 165-244.
- Behrman, J. (1992, Spring). Study reveals how disabled fare in years after school. Counterpoint, pp. 1,17,18.
- Benz, M. R., & Halpern, A. S. (1987). Transition services for secondary students with mild disabilities: A statewide perspective. Exceptional Children, 53, 507-514.
- Bobroff, A. (1955). Economic adjustment of 121 adults, formerly students in classes for mental retardates. American Journal of Mental Deficiency, 60, 525-535.
- Boyce, D. A. & Elzey, F. F. (1978). A study of the vocational adequacy of former special education students following high school graduation. Sacramento,

- CA: California State Department of Education. (ERIC Document Reproduction Service No. ED 163 668)
- Burchard, J. D., & Clarke, R. T. (1990). The role of individualized care in a service delivery system for children and adolescents with severely maladjusted behavior. Journal of Mental Health Administration, 17(1), 48-60.
- Carriker, W. R. (1955). A comparison of post school adjustment of regular and special class retarded individuals served in Lincoln and Omaha, Nebraska, public schools. (Contract No. SAE 6445). Columbus, OH: Ohio State University. (ERIC Document Reproduction Service No. ED 022 775)
- Cobb, R. M., & Crump, W. D. (1984). Post-school status of young adults identified as learning disabled while enrolled in public schools: A comparison of those enrolled and not enrolled in learning disabilities programs. Tuscaloosa, AL: University of Alabama. (ERIC Document Reproduction Service No. ED 253 029)
- Collister, L. (1975). A comparison of the long range benefits of graduating from special vs. mainstream school for mildly mentally handicapped students. Seattle, WA: Seattle Public Schools, Washington, Department of Planning, Research, and Evaluation. (ERIC Document Reproduction Service No. ED 117 870)

- Coonley, P. (1980). A fifteen year follow up study of the North Kansas City Public Schools work study graduates, 1968-1980. Paper presented at the Annual International Convention of the Council for Exceptional Children. (ERIC Document Reproduction Service No. ED 196 211)
- Council for Children with Behavioral Disorders (1992). Position paper on the provision of service to children with conduct disorders. Behavioral Disorders, 15, 180-189.
- Dinger, J. D. (1961). Former educable retarded pupils. Exceptional Children, 27(4), 353-360.
- Dinger, J. D. (1973). A follow up study of the post school employment success of graduates from four high school special education programs in midwestern intermediate Unit IV in Pennsylvania for the school years 1969-70, 1970-71, and 1971-72. A final report. Harrisburg, PA: Pennsylvania State Department of Education. (ERIC Document Reproduction Service No. ED 110 726)
- Edgar, E. (1985). How do special education students fare after they leave school? A response to Hasazi, Gordon, and Roe. Exceptional Children, 51, 470-473.
- Edgar, E. (1987). Secondary programs in special education: Are many of them justifiable? Exceptional Children, 53, 555-561.
- Edgar, E., & Levine, P. (1987). A longitudinal study of graduates of special education. In J. Chadsy-Rusch

(Ed.), Project Directors' Annual Conference Proceedings, Washington, D. C. (ERIC Document Reproduction Service No. ED 303 004)

Edgar, E., Levine, P., Levine, R., & Dubey, M. (1988).

Washington state follow along studies 1983-1987: Students in transition, final report. Seattle, WA: University of Washington, Networking and Evaluation Team, Experimental Education Unit.

Fairbanks, R. (1933). The subnormal child seventeen years after. Mental Hygiene, 17, 177-208.

Fardig, D. B., Algozzine, R., Schwartz, S, Hensel, J., & Westling, D. (1985). Postsecondary vocational adjustment of rural, mildly handicapped students. Exceptional Children, 52, 115-121.

Federal Register (1977, August 23). Washington, D.C.: U.S. Government Printing Office.

Federal Register (1990, October 30). Washington, D.C.: U.S. Government Printing Office.

Fox, J. (1984). Linear statistical models and related methods with application to social research. New York: John Wiley & Sons.

Frank, A. R., Sitlington, P. L., & Carson, R. (1991). Transition of adolescents with behavioral disorders--Is it successful? Behavioral Disorders, 16, 180-191.

- Gill, D. H. (1984). An employment related follow-up of former special education students in Pierce County, Washington (1983-84). Tacoma, WA: Pierce County Educational Service District 121. (ERIC Document Reproduction Service ED 250 854).pa
- Goode, B. (1988). The principles and recommendations from the quality of life project. Valhalla, NY: Mental Retardation Institute.
- Gozali, J. (1972). Perceptions of the EMR special class by former students. Mental Retardation, 10(2), 34-35.
- Halpern, A. S. (1973). General unemployment and vocational opportunities for EMR individuals. American Journal of Mental Deficiency, 78, 123-127.
- Halpern, A. S. (1985). Transition: A look at the foundations. Exceptional Children, 51, 479-486.
- Halpern, A. S. (1990). A methodological review of follow-up and follow-along studies tracking school leavers from special education. Career Development for Exceptional Individuals, 13(1), 13-27.
- Hasazi, S. B., Gordon, L. B., & Roe, C. A. (1985). Factors associated with the employment status of handicapped youth exiting high school from 1979 to 1983. Exceptional Children, 51, 455-469.
- Hosmer, D. W. & Lemeshow, S. (1989). Applied logistic regression. New York: John Wiley & Sons.

- Humes, C. H., & Brammer, G. (1985). LD career success after high school. Academic Therapy, 21, 171-176.
- Kerlinger, F. N. (1986). Foundations of behavioral research. Fort Worth, TX: Holt, Rinehart, & Winston.
- Knitzer, J., Steinberg, Z., & Fleisch, B. (1990). At the school house door: An examination of programs and policies for children with behavioral and emotional problems. New York: Bank Street College of Education.
- Levine, E., Zigmond, N, & Birch, J. (1985). A follow-up study of 52 learning disabled students. Journal of Learning Disabilities, 18(1), 2-7.
- Mithaug, D. E., & Horiuchi, C. N. (1983). Colorado statewide followup survey of special education students and appendices. Denver, CO: Colorado University Colorado Springs, School of Education. (ERIC Document Reproduction Service No. ED 250 902)
- Mithaug, D. E., Horiuchi, C. N., & Fanning, P. N. (1985). A report on the Colorado statewide follow-up survey of special education students. Exceptional Children, 51, 397-404.
- Modrcin, M. J. (1987). Emotionally handicapped youth in transition: Issues and principles for program development. Portland, Oregon: Research and training Center to Improve Services for Seriously Emotionally

- Handicapped Children and Their Families, Portland State University.
- Mount, B., Beeman, Pl, & Ducharme, G., (1988). Learning about circles of support. Manchester, CN: Communities, Inc.
- National Clearinghouse on Professions in Special Education (1988). Shortages in special education and related services. Reston, VA: Author.
- Neel, R. S., Meadows, N., Levine, P., & Edgar, E. B. (1988). What happens after special education: A statewide follow-up study of secondary students who have behavioral disorders. Behavioral Disorders, 13, 209-216.
- Neubert, D. A., Tilson, G. P., & Ianacone, R. N. (1989). Postsecondary transition needs and employment patterns of individuals with mild disabilities. Exceptional Children, 55, 494-500.
- Peterson, L., & Smith, L. (1960). The post-school adjustment of educable mentally retarded adults with that of adults of normal intelligence. Exceptional Children, 26, 404-408.
- Powers, G., & Lewis, J. (1976). 1970-1975 follow-up of hearing impaired graduates of Pennsylvania. Harrisburg, PA: Pennsylvania State Department of Education. (ERIC Document Reproduction Service No. ED 136 496)

- Rusch, F. R., & Phelps, A. L. (1987). Secondary special education and transition from school to work: A national priority. Exceptional Children, 53, 487-492.
- SAS Institute, Inc. (1989). SAS/STAT user's guide vol. 2. Cary, NC: Author.
- Shapiro, E. S., & Lentz, F. E. (1991). Vocational-technical programs: Follow-up of students with learning disabilities. Exceptional Children, 58, 47-59.
- Siegel, S., Robert, M., Waxman, M., & Gaylord-Ross, R. (1992). A follow-along study of participants in a longitudinal transition program for youth with mild disabilities. Exceptional Children, 58, 346-356.
- Sitlington, P. L. (1986). Iowa statewide follow-up study: Adult adjustment of individuals with behavior disorders one year after leaving school. Des Moines, IO: Iowa State Department of Public Instruction, Division of Special Education. (ERIC Document Reproduction Service No. ED 323 677)
- Strickland, C. G., & Arrell, V. M. (1967). Employment of the mentally retarded. Exceptional Children, 34, 21-24.
- Stroul, B. A., & Friedman, R. M. (1986). A system of care for severely emotionally disturbed children and youth. Washington, D.C.: CASSP Technical Assistance Center, Georgetown University, Child Development Center.

- Titus, R. W., & Travis, J. T. (1975). Follow-up of EMR program graduates. Mental Retardation, 11(2), 24-26.
- U.S. Bureau of the Census (1982). Labor force status and other characteristics of persons with a work disability. Washington, D.C.: Author.
- U.S. Department of Education, (1990). Twelfth annual report to Congress on the implementation of the Education of the Handicapped Act. Washington, D.C.: Author.
- Valdes, K. A. (1990). The National Longitudinal Transition Study of Special Education data documentation (U.S. Department of Education Contract No. 300-87-0054). Menlo Park, CA: SRI International.
- Valdes, K. A., Williamson, C. A., Wagner, M. (1990). The National Longitudinal Transition Study of Special Education Students statistical almanac, volume 3: Youth categorized as emotionally disturbed (U.S. Department of Education Contract No. 300-87-0054). Menlo Park, CA: SRI International.
- Viadero, D. (1992, March 18). Disabled students found to achieve mixed success: Federal data documents life after high school. Education Week, pp. 1,25.
- Wagner, M. (1989, March). The National Longitudinal Transition Study of Special Education Students. Paper presented to the Division of Research, Council for Exceptional Children annual meeting, San Francisco, CA.

- Wagner, M., & Cox, R. (1990). Involvement with vocational rehabilitation agencies by young people with disabilities in the early years after secondary school. A report from the National Longitudinal Transition Study of Special Education Students (U.S. Department of Education Contract No. 300-87-0054). Menlo Park, CA: SRI International, unpublished manuscript.
- Wagner, M., Jay, D., Fairweather, J., & Stearns, M. (1987). Design of a longitudinal study of a sample of handicapped students. Menlo Park, CA: SRI International, unpublished manuscript.
- Wagner, M., Newman, L., D'Amico, R., Jay, D. E., Butler-Nalin, P., Marder, C., & Cox R. (1991). Youth with disabilities: How are they doing? A comprehensive report from the National Longitudinal Transition Study of Special Education Students (U.S. Department of Education Contract No. 300-87-0054). Menlo Park, CA: SRI International.
- Wagner, M., Newman, L., & Shaver, D. (1989). The National Longitudinal Transition Study of Special Education Students: Report on procedures for the first wave of data collection (U.S. Department of Education Contract No. 300-87-0054). Menlo Park, CA: SRI International.
- Wehman, P., Kregel, J., & Seyfarth, J. (1985). Transition from school to work for individuals with severe

- handicaps: A follow-up study. Journal of the Association for Persons with Severe Handicaps, 10(3), 132-136.
- Weick, C. (1988). Defining a value-based service system. In A. M. Covert & T. S. Carr (Eds.), Value-based services for adults with deaf-blindness: A report of a national conference. Sands Point, NY: Helen Keller National Center.
- Will, M. (1984). OSERS programming for the transition of youth with disabilities: Bridges from school to working life. Washington D.C.: Office of Special Education and Rehabilitation Services.
- Wolfensberger, W. (1983). Social role valorization: A proposed new term for the principle of normalization. Mental Retardation, 21, 234-239.
- Zigmond, N. & Thornton, H. (1985). Follow-up of postsecondary age learning disabled graduates and dropouts. Learning Disabilities Research, 1(1), 50-55.