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ABSTRACT

This report addresses questions of interest to federal officials in the Office of Special Education and Rehabilitative Services (OSERS) concerning the characteristics, services, and outcomes of transition-aged youth (ages 18-25) who applied for Vocational Rehabilitation (VR) services during November 1994-December 1996. The analyses conducted for the report address the specific questions developed by a task force of OSERS officials. Findings include: (1) transitional youth represent 13.5% of all VR consumers, or approximately 135,391 persons, with nearly two-thirds of these youth having participated in special education in high school; (2) an educational institution had referred 64% of these youth to VR, with youth who were special education students referred more often by this source; (3) youth who had been special education students were more often male, African-American, and experienced mental retardation or learning disabilities; (4) transitional youth typically applied to VR in order to obtain services that would assist them in labor force entry; (5) youth VR consumers averaged about 8 services during VR; (6) nearly two-thirds of youth VR consumers achieved an employment outcome as a result of VR services; and (7) of those who achieved employment, the majority entered competitive employment. Appendices include consumer information. (Contains 20 tables and 3 figures.) (CR)

A Longitudinal Study of the Vocational Rehabilitation Service Program

Fourth Interim Report:

Characteristics and Outcomes of Transitional Youth in VR

July 2000

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Table of Contents

List of Tables

List of Tables

List of Figures

Executive Summary

This report addresses questions of interest to federal officials in the Office of Special Education and Rehabilitative Services (OSERS) concerning the characteristics, services, and outcomes of transition-aged youth (defined as youth with disabilities between the ages of 18 and 25) who applied for Vocational Rehabilitation (VR) services during the study's sample acquisition period (November 1994-December 1996). The analyses we conducted for the report address the specific questions developed by a task force of OSERS officials who are involved in ensuring the effectiveness of educational and vocational habilitation and rehabilitation services for the nation's transitional youth with disabilities. The findings reported here are nationally representative and are generalizable to transition-aged VR consumers nationwide. Through the use of sampling weights based on probabilities of selection for each study participant, we provide estimates of the numbers and distributions of transitional youth nationwide served by VR during the course of the study. In the remainder of this summary, we use the research questions chosen by OSERS officials to organize key findings.

Among transition-age VR consumers, what are the characteristics of individuals who received special education services versus those who had not received special education services?

- Transitional youth represent 13.5 percent of all VR consumers, or approximately 135,391 persons; nearly two-thirds of these youth had participated in special education in high school.
- Sixty-four percent had been referred to VR by an educational institution; youth who were special education students were more often referred by this source (74 versus 47.5 percent).
- Youth who had been special education students, in comparison with their peers who had not received special education, were more often male (61.6 versus 52.9 percent), African-American (21.2 versus 10.3 percent), and mentally retarded (32.9 versus 1.2 percent) or learning disabled (40.2 versus 12.9 percent).
- While both groups had disabilities that were classified as significant or most significant, special education students' disabilities were more frequently congenital rather than acquired (81.3 versus 34.3 percent).
- Youth VR consumers who received special education in high school were more likely than their other peers to be in school at the time of application to VR (70.9 versus 51.5 percent), to have completed fewer years of school, and to have lower grade level equivalent achievement in reading (5.1 versus 9.8) and mathematics (5.2 versus 8.7).
- More special education students than nonspecial education students in this population received SSI-Disabled both at entry to VR (66.9 percent versus 44.1 percent) and following exit (67.5 versus 53.8 percent), though the gap narrowed following exit.

- Special education students were lower in self-esteem and perceived themselves to be more often controlled by chance and other people than youth VR consumers who had not received special education services in high school.
- The groups also differed in work history: 24.6 percent of youth special education students had never worked, compared to 14.5 percent of other youth, and fewer were working at application to VR (24.9 versus 37.7 percent).

What reasons do transitional youth have for applying for VR services? What job or vocational interest(s) do they express? How do they differ according to special education status?

- Transitional youth typically applied to VR in order to obtain services that would assist them in labor force entry, including job placement (two-thirds of youth VR consumers), vocational training (60 percent), and support for education (51 percent).
- Youth who did not receive special education services in high school more often sought support to continue their education than did their special education peers (65 versus 43 percent).
- In general, youth VR consumers established vocational goals in one of three occupational fields: professional/ managerial/technical (40 percent overall, 25 percent of special education youth and 63 percent of others); services (24 percent overall, 31 percent of special education youth and 13 percent of others); or clerical/sales occupations (12 percent overall, 13 percent of special education youth and 11 percent of others).
- Relatively few youth VR consumers (18 percent) changed their vocational goal following initial Individualized Plan for Employment (IPE) development.

For special education and nonspecial education students, what types of services and financial assistance did transition-age VR consumers receive?

- Both groups of youth VR consumers averaged about 8.0 services during VR.
- Nearly all of both groups obtained counseling, guidance, and placement services (95 and 94 percent, respectively).
- More special education students obtained diagnostic and evaluation services (85 versus 72 percent) and transportation, housing, and maintenance services (25 versus 18 percent).
- More nonspecial education youth obtained support for education (55 versus 45 percent) and averaged more of those services (2.0 versus 1.2).
- The average cost of purchased services was $1,782.

To what extent are families and/or advocates involved in the VR process for individuals who had received special education services versus those who had not?

- For about one-third of special education students, family members were involved in the VR experience, compared with 14 percent of other youth.
- Among activities families assisted with were selection of vocational goal, determination of services to be provided, and selection of service providers.

What variables are associated with attrition for individuals who had received special education?

- Special education students who left VR before receiving or completing services did not differ significantly from those who completed services or from nonspecial education peers on demographic or other characteristics.

What factors are associated with employment outcomes and earnings levels for young adult VR program participants?

- Overall, nearly two-thirds (63 percent) of youth VR consumers achieved an employment outcome as a result of VR services, with the rate for youth who had received special education services in high school slightly higher than that for the other group (64 versus 59 percent).
- Of those who achieved employment, nearly all of the nonspecial education youth entered competitive employment (99 percent), compared with 81 percent of special education students.
- Special education youth VR consumers earned less per hour ($5.57 versus $6.47) and worked fewer hours (33.6 versus 37.1) than did other youth, who more often obtained jobs in the professional/managerial/technical fields (21 versus 6 percent).
- Youth who achieved an employment outcome tended to rate their VR experience more highly on all dimensions than did those who failed to achieve such an outcome.
- Multiple regression analyses found that:
  - Receipt of specific VR services, including education or training services, physical or mental restoration services, and diagnostic or evaluation services, was strongly associated with achieving an employment outcome, and to entering competitive employment, for both special education recipients and nonrecipients.
  - Receipt of public financial assistance (e.g., SSI-disabled, general assistance) was negatively related to achievement of an employment outcome for nonrecipients of special education and to entering competitive employment for both groups.
  - Self-esteem, locus of control, gender, and limitations in gross motor or cognitive functioning were also associated with employment outcomes.

Of individuals who received special education services and were accepted for VR services, what were their gains in terms of employment, functional capacities, and reduction in public dependency?

- Youth who received special education services in high school made gains in employment from acceptance to closure but not in reduction of public financial assistance.
- Youth who received VR services but did not achieve employment did experience a reduction in such assistance between entry to and exit from VR.
- Functional status scores did not change significantly from acceptance to closure.

Chapter 1: Introduction

Initiated in fall 1992, the Longitudinal Study of the Vocational Rehabilitation (VR) Services Program will address key questions of interest to Congress, the Rehabilitation Services Administration (RSA), state VR agencies, and consumers about the performance of the state-federal VR program. The study's design, reflecting the typical service patterns of VR program participants, calls for repeated contacts with individuals over a three-year period to obtain comprehensive information to support judgments about the benefits to consumers and to society of the VR system as it currently operates.[1]

Because of the longitudinal nature of the study, RSA in designing it called for a number of interim reports that would, in an incremental fashion, begin making study findings available to policy makers and practitioners as the study proceeded over a six-year period. This report is the last of four interim reports that, along with the study's final report, will answer key questions about the program's impacts on participants. To orient readers to the study, this chapter of the report provides an overview of the study's information goals and reporting schedule, data collection design and activities, and current status.

This report addresses questions of interest to federal officials in the Office of Special Education and Rehabilitative Services (OSERS) concerning the characteristics, services, and outcomes of transition-aged youth (defined as youth with disabilities between the ages of 18 and 25) who applied for VR services during the study's sample acquisition period (November 1994-December 1996). The analyses we conducted for the report address the specific questions developed by a task force of OSERS officials who are involved in ensuring the effectiveness of educational and vocational habilitation and rehabilitation services for the nation's transitional youth with disabilities. The findings reported here are nationally representative and are generalizable to the transition-aged VR consumers nationwide. Through the use of sampling weights based on probabilities of selection for each study participant, we provide estimates of the numbers and distributions of transitional youth nationwide served by VR during the course of the study.

Specific questions we were asked to address in this report are as follows:

Question 1: Among transition-age VR consumers, what are the sociodemographic, disability, education, program participation, self-esteem and employment characteristics of individuals who received special education services versus those who had not received special education services? How do these characteristics vary by specific

[1] Recently, RSA decided to extend the study to collect follow-up information on study participants for an additional two years beyond the three years originally planned.

disability (e.g., learning disability, mental retardation, emotional disturbance/mental illness)?

a. What are the sociodemographic characteristics (i.e., sex, race, family income) of individuals who received special education services versus those who had not received special education services?

b. What are the disability characteristics (i.e., Activities of Daily Living [ADLs]; Instrumental Activities of Daily Living [IADLs]; functional limitations) of individuals who received special education services versus those who had not received special education services?

c. What are the education characteristics (i.e., completed years, special education, highest education level of responsible adult family member, literacy levels) of individuals who received special education services versus those who had not received special education services?

d. What are the program participation characteristics (i.e., SSI, SSDI, food stamps, AFDC/TANF, Section 8) of individuals who received special education services versus those who had not received special education services?

e. What are the self-esteem and locus of control of individuals who received special education services versus those who had not received special education services?

f. What are the employment characteristics (i.e., work history; currently working; months employed during 12 months; hours per week; monthly earnings) of individuals who received special education services versus those who had not received special education services?

Question 2: What reasons do transitional youth have for applying for VR services? What job or vocational interest(s) do they express? How do they differ according to special education status?

Question 3: For special education and nonspecial education students, what types of services and financial assistance did transition-age VR consumers receive? What are the primary sources of support for these groups?

Question 4: To what extent are families and/or advocates involved in the VR process for individuals who had received special education services versus those who had not?

Question 5: What variables are associated with attrition for individuals who had received special education? What are the employment outcomes, public assistance statuses, and satisfaction levels of individuals who have left without receiving or completing VR services; how does that attrition compare with the attrition of transition-age individuals who did not receive special education?

Question 6: What sociodemographic, disability, education, program participation, and self-esteem factors are associated with employment outcomes and earnings levels for young adult VR program participants?

a. To what extent are sociodemographic factors (i.e., sex, race, family income) associated with employment for young adults with disabilities?

b. To what extent are disability factors (i.e., difficulties with ADLs and/or IADLs) associated with employment for young adults with disabilities?

c. To what extent are education factors (i.e., completed years, special education, literacy levels) associated with employment?

d. To what extent are program participation factors (i.e., SSI) associated with employment?

e. To what extent are what are the self-esteem factors (i.e., locus of control, attitudes) associated with employment?

f. To what extent is consumer satisfaction associated with an employment outcome?

Question 7: Of individuals who received special education services and were accepted for VR services, what were their gains in terms of employment, functional capacities, and reduction in public dependency?

The organization of the report follows the sequence of these questions. Chapter 2 reports our analysis of characteristics of transitional youth with disabilities who applied for VR services according to whether or not they received special education services in high school, as indicated in documentation in their VR case files. Chapter 3 examines transitional youths' reasons for entering VR, types of services they obtained, extent of family involvement in the VR process, and factors associated with attrition. Chapter 4 examines VR outcomes.

The findings contained in these chapters come from two primary sources. First is information abstracted from VR case files of study participants. Second is a series of detailed interviews administered to all study participants at the time of entry into the study and at annual intervals for a subsequent three-year period. These interviews obtain information on work history, functional status, vocational interests, consumer attitudinal characteristics, perspectives on the VR experience, and retention of earnings and employment, as well as such other outcomes as independence and community integration, over time.

Remaining sections of this chapter review the longitudinal study's reporting schedule, data collection design, and current status, for the convenience of readers who may be somewhat unfamiliar with the study's activities.

The Study's Information Goals and Reporting Schedule

Commissioned by RSA and mandated by the Congress in the 1992 Rehabilitation Act Amendments, the VR longitudinal study has been designed to answer the following questions:

- What short- and long-term economic and noneconomic (e.g., independent living, community integration) outcomes do VR applicants and consumers achieve as a result of their participation in VR?
- What characteristics of individuals with disabilities affect their (1) access to and receipt of VR services and (2) short- and long-term outcomes?
- To what extent does receipt of specific VR services contribute to successful consumer outcomes?

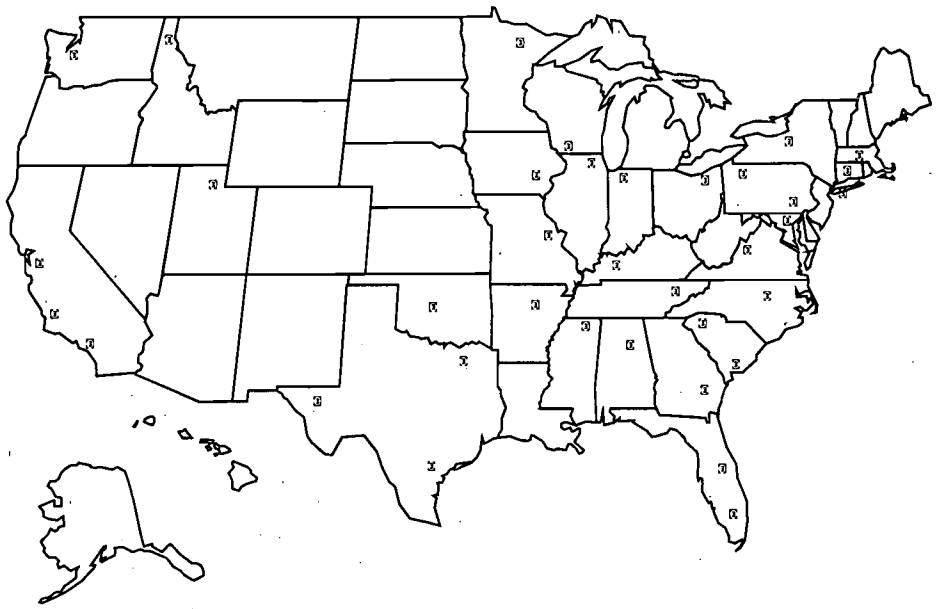
- In what ways and to what extent do local environmental factors influence VR consumers' services and outcomes?
- In what ways and to what extent do the operations, resources, and organizational climate of VR agencies influence consumers' services and outcomes?
- What is the return on the VR program's investment?

Definitive findings that address these study questions will follow completion of the study's longitudinal data collection activities, scheduled for January 2000. Over the study period, the study's design has permitted us to prepare interim findings on topics selected in consultation with RSA officials. The first interim report, completed in October 1995, contained profiles of the local offices and their environments, based primarily on analyses from the 1990 decennial census and a mail survey of each of the 40 local VR offices participating in the study. The second interim report, completed in December 1996, described (1) characteristics of current and former VR consumers; (2) history of labor force participation among VR consumers; and (3) consumers' perspectives on their VR services, service providers, and other aspects of their involvement with the VR program. The third interim report, dated August 1998, contained descriptive findings on characteristics of persons who achieved an employment outcome, including work history and details of their post-VR employment and earnings status.

Data Collection Design

Collection of information required to address the evaluation's questions, which began in November 1994, will end in January 2000. (Data collection associated with the extended follow up of study participants began in summer 1999 and will extend through summer 2001, to be followed by a report on findings from that activity.) We are implementing a multistage, nationally representative, design that initially involved selection of a random sample of 40 local VR offices (in 32 state agencies located in a total of 30 states) and a sample of 8,500 current and former consumers of VR services. Owing to difficulties in employing and retaining qualified individuals to serve as field data collectors, we have experienced some attrition, and at present, data collection continues in 37 of the original 40 offices selected for study. **Figure 1** indicates the states in which the participating offices operate. Additionally, the original intent was to include a sample of 10,000 consumers, to enter the study over a 12 to 18-month period. The complexity of the data collection design, along with attrition and a variety of logistical changes in local office operations around the country, meant that sample acquisition extended over 24 months, rather than the time originally intended. The period of sample acquisition, which has paralleled a period of numerous changes in VR program operations and activities (resulting from changes in the 1992 Amendments and a variety of other factors), led us to modify the sample design by reducing the total number of target participants to 8,500 while not sacrificing precision necessary to address the study's broad research questions.

Figure 1. Location of Offices Participating in the Longitudinal Study



participating VR offices

In order to assess the longer term outcomes of VR participation, the study implemented a cohort design that entailed random selection of individuals at one of three stages of involvement with VR. We selected 25 percent of the total sample (approximately 2,125 persons) when they were in the application stage; the larger cohort, 50 percent of the sample (4,250 persons), entered the study while they were receiving VR services. The third cohort, 25 percent of the sample (2,125 persons), entered the study at or after VR case closure.

We follow each individual for a total of three years; some will still be receiving VR services at the end of the three-year period, although most will have left VR and be working, receiving other services, or engaging in a variety of other activities. Following baseline data collection, we conduct an annual interview with each study participant, the topics of which depend on the individual's current circumstances in regard to VR services. This design accommodates the average length of stay in VR (nearly two years) while at the same time permitting us to track the post-VR earnings, employment, and community integration of individuals following exit from VR either as "successful" or "unsuccessful" closures.

Figure 2 summarizes the data collection instruments and administration schedules for the study. As noted, the study's field data collectors are gathering detailed information through baseline and annual interviews with study participants as well as through quarterly abstraction of case file information. Additionally, we are obtaining information from local office managers, rehabilitation counselors, and other office staff, along with information from state VR agencies on policies and

Figure 2. Data Collection Instruments, with Method and Frequency of Administration

INSTRUMENT	METHOD	FREQUENCY
Consumer interviews		
Work history	Personal/telephone interview	Baseline
Functional status	Personal/telephone interview	Baseline and case closure
Satisfaction	Personal/telephone interview	Baseline and annually to closure
Annual follow up	Telephone interview	Annually from closure of case file
Consumer records		
Consumer characteristics	Records abstraction	Baseline with quarterly updates
Services	Records abstraction	Baseline and quarterly
Agency instruments		
State policies and procedures form	Mail/self-administered	Baseline with annual updates
Local office manager questionnaire	Mail/self-administered	Baseline with annual updates
Other office staff questionnaire	Mail/self-administered	Baseline and end of data collection
VR counselor questionnaire	Mail/self-administered	Baseline and end of data collection

procedures that affect the delivery and outcomes of services. For active consumers, file data collection occurs quarterly until closure.

Current Status of Data Collection

As noted earlier, sample acquisition and baseline data collection, including extensive interviews with study participants and abstraction of detailed information from case files, began in November 1994 and extended through November 1996. All data collection activities for the main study will end in January 2000; at this time, over 90 percent of study participants will have exited VR services. As specified in the design, in spring and summer 1999 we readministered mail surveys of staff working in the participating offices. Additionally, we have periodically collected updated information on the offices and on state policies and procedures that may affect program operations. Finally, we are analyzing data from large national data sets on local economic conditions that may affect employment outcomes for consumers in the localities around the country in which VR offices are participating in the study.

Chapter 2: Characteristics of Transition-Aged VR Consumers

Of particular interest to the OSERS transition task force is the extent to which the VR program provides services to transition-aged youth with disabilities and the outcomes of those services in terms of employment and earnings. One aspect of this issue is what types of transition-aged youth are applying for and entering VR, what their entry patterns are, and whether most of them move from high-school special education programs into VR or gain access to the VR system through some other route. To address these and related issues, we conducted a number of descriptive analyses of information from VR case files and interview data on the subset of the VR population who were transition aged (25 years old or younger) at the time of the analyses (i.e., in November 1999). This chapter reports analyses for the first of the OSERS questions:

Question 1: Among transition-age VR consumers, what are the sociodemographic, disability, education, program participation, self-esteem and employment characteristics of individuals who received special education services versus those who had not received special education services? How do these characteristics vary by specific disability (e.g., learning disability, mental retardation, emotional disturbance/mental illness)?

a. What are the sociodemographic characteristics (i.e., sex, race, family income) of individuals who received special education services versus those who had not received special education services?

b. What are the disability characteristics (i.e., Activities of Daily Living [ADLs]; Instrumental Activities of Daily Living [IADLs]; functional limitations) of individuals who received special education services versus those who had not received special education services?

c. What are the education characteristics (i.e., completed years, special education, highest education level of responsible adult family member, literacy levels) of individuals who received special education services versus those who had not received special education services?

d. What are the public and private assistance patterns (i.e., SSI, SSDI, food stamps, AFDC/TANF, Section 8) of individuals who received special education services versus those who had not received special education services?

e. What are the self-esteem and locus of control of individuals who received special education services versus those who had not received special education services?

f. What are the employment characteristics (i.e., work history; currently working; months employed during 12 months; hours per week; monthly earnings) of individuals who received special education services versus those who had not received special education services?

To establish a context for these analyses, we first provide a brief overview of VR participation among transitional youth. Following the overview is a series of analyses that characterize transitional youth who have received VR services based on whether or not they had received special education services in high school. These analyses shed light on the VR experiences and outcomes of students who move from special education into the VR system and compare those experiences and outcomes to those of transitional youth whose background does not include receipt of special education in high school. Additionally, **Appendix A** contains a parallel set of analyses by disability type.

Overview of Transitional Youth as VR Consumers[2]

As reported in **Table 1**, transitional youth represent 13.5 percent of the total VR consumer population, or an estimated 135,391 persons. Sixty-two percent of these youth (84,211) received special education services during high school. As of November 1999, 26.4 percent were continuing to receive VR services and 33.5 percent had exited VR having achieved an employment outcome. Thirteen percent had been accepted for VR services but dropped out before completion of an Individualized Plan for Employment (IPE), while 19.8 percent had received services but left VR without having achieved an employment outcome. Our analyses show significant differences in these patterns based on whether or not consumers had received special education services in high school. For example, youth who applied to VR and had not received special education services were more often determined ineligible for VR services (10.3 percent versus 4.0 percent). Among those accepted for services, those without special education were more often still engaged in VR up to three years later (40.7 percent versus 17.7 percent). In contrast, youth VR consumers who participated in special education in high school had, by the time of data analysis, achieved an employment outcome at nearly twice the rate of their peers who did not receive such services (40.0 versus 22.7 percent). This difference is in part attributable to the higher proportion of nonspecial education youth who were still receiving services at the time of this report.

The two groups also differed in terms of their length of time in VR, with former special education consumers averaging 18 months from application to closure (median 16.7) and other transitional youth averaging 10.9 months (median 17.6). Youth who received special education in high school exited VR services with an employment outcome at a slightly higher rate than did those who did not receive such services (.64 versus .59), although this difference was not statistically significant.

[2]Unless otherwise noted, all comparisons/differences appearing in the text are statistically significant at a probability level of .05 or lower. All significant differences are also indicated in each table with asterisks.

Table 1. Characteristics of Transitional Youths' Participation in VR, by Receipt of Special Education in High School

	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
Transitional Youth	**Yes**	**No**	**Total**
Number of participants	84,211	51,180	135,391
Percentage of all transitional youth	62.2	37.8	100.0
Percentage of total VR consumer population	8.4	5.1	13.5
Current status	**Percentage**	**Percentage**	**Percentage**
Applicant for services	1.3	0.5	1.0
Not eligible for services*	4.0	10.3	6.3
Currently receiving services*	17.7	40.7	26.4
Dropped out before receiving services	14.6	10.3	13.0
Dropped out after receiving services	22.4	15.7	19.8
Achieved an employment outcome*	40.0	22.7	33.5
Total	100.0	100.0	100.0
	Mean (median)	**Mean (median)**	**Mean (median)**
Months in VR*	18.0 (16.7)	10.9 (17.6)	15.4 (12.7)
Rehabilitation rate			
(number achieving employment outcome divided by all who received services)	0.64	0.59	0.63

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

As shown in **Table 2**, youth who received special education in high school were more likely to enter VR through a school referral than were those who did not receive such services: 74 percent of special education recipients were referred to VR by an educational institution, versus 47.5 percent of others. Nonspecial education recipients were more often referred by a health organization (11.7 versus 1.4 percent), self-referred (10.2 versus 4.4 percent), or referred through some other mechanism (5.9 versus 2.6 percent).

Demographic and Disability Characteristics

Youth VR consumers who received special education services in high school were more often male (61.6 versus 52.9 percent) and African-American (21.1 versus 10.3 percent) than were youth consumers who had not participated in special education in high school (**Table 3**). Average age was the same for both groups (23.0), with ages ranging from 19 to 25.

As a group, transitional youth who had received special education services in high school more often had as a primary disability either mental retardation (32.9 versus 1.2 percent) or

Table 2. Source of Referral to VR Among Transitional Youth, by Receipt of Special Education in High School

Referral Source	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
	Percentage	Percentage	Percentage
Educational institution*	74.0	47.5	63.9
Rehabilitation facility	2.0	2.5	2.2
Hospital, physician, or other health organization*	1.4	11.7	5.3
Residential institution	0.4	0.7	0.5
Other agency/organization	6.5	10.7	8.1
Family member or friend	8.7	10.8	9.5
Self*	4.4	10.2	6.6
Other*	2.6	5.9	3.9
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table 3. Demographic Characteristics of Transitional Youth at Entry, by Receipt of Special Education in High School[a]

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
Gender	**Percentage**	**Percentage**	**Percentage**
Male*	61.6	52.9	58.3
Female*	38.4	47.1	41.7
Total	100.0	100.0	100.0
	Mean (median)	**Mean (median)**	**Mean (median)**
Age	23.0 (23.0)	23.0 (23.0)	23.0 (23.0)
Range	19 - 25	19 - 25	19 - 25
Race/ethnicity	**Percentage**	**Percentage**	**Percentage**
White*	77.1	89.2	81.7
African-American*	21.1	10.3	17.0
Alaska Native or American Indian	0.4	0.2	0.3
Asian or Pacific Islander	1.4	0.3	1.0
Total	100.0	100.0	100.0
Of Hispanic origin	11.8	9.4	10.9

Transitional youth are persons who are 25 years old or younger.

[a]Comparable data for all special education students were not available.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

learning disability (40.2 versus 12.9 percent) than did youth who had not received special education services in high school (**Table 4**). The latter group more frequently had mental illness (21.4 versus 9.3 percent) or other disabilities, including sensory, orthopedic, or other physical disabilities (64.5 versus 17.7 percent) as a primary disability. Most members of both groups were classified as having a significant or most significant disability.[3] Nearly all (81 percent) of the former special education participants had a congenital versus acquired disability, while two- thirds of the nonparticipants had acquired their disability. In terms of functional limitations, the two groups were

Table 4. Disability Characteristics of VR Consumers Who are Transitional Youth, by Receipt of Special Education in High School

Characteristic	Percent of all 1997-98 special education Students ages 12-17	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
		Yes	No	Total
Type of disability		**Percentage**	**Percentage**	**Percentage**
Mental illness/emotional disturbance*	11.4	9.3	21.4	13.9
Mental retardation*	12.3	32.9	1.2	20.9
Learning disability*	62.2	40.2	12.9	29.9
Other*	14.0	17.7	64.5	35.3
Total	100.0	100.0	100.0	100.0
Significance of disability		**Percentage**	**Percentage**	**Percentage**
Significant/most significant		81.1	77.2	79.6
Nonsignificant		18.9	22.8	20.4
Total		100.0	100.0	100.0
Onset of disability		**Percentage**	**Percentage**	**Percentage**
Congenital*		81.3	34.3	63.4
Acquired*		18.7	65.7	36.6
Total		100.0	100.0	100.0
Functional limitations		**Mean**	**Mean**	**Mean**
Gross motor function		1.94	1.93	1.93
Cognitive function*		1.73	1.94	1.82
Personal care function		1.98	1.99	1.98

Transitional youth are persons who are 25 years old or younger.

*Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

[3]The 1998 reauthorization of the Rehabilitation Act replaced the terms "severe disability" and "most severe disability" with "significant disability" and "most significant disability." We follow that change in this report and clarify as necessary whether we are using the term "significant" as a statistical term or as a characterization of disability.

nearly the same in gross motor and personal care function. They differed, however, in terms of cognitive function, with the nonspecial education group functioning at a higher level on this dimension.[4]

Based on data from Office of Special Education Programs (OSEP) on the disabilities of youth aged 12-17 who received special education services in school year 1997-98, special education students overall were more likely than those who received VR services to have learning disabilities (62.2 versus 40.2 percent) and mental illness or emotional disturbance (11.4 versus 9.3 percent). Special education recipients who received VR services were more likely than the 12-17 year-old group to have mental retardation (32.9 versus 12.3 percent) or other disabilities (17.7 versus 14.0 percent).

Educational Characteristics

Table 5 contains findings regarding the educational status of transitional youth at the time of entry into the VR program. Nearly two-thirds of transitional youth were still in school. Seventy-one percent of those who received special education services in high school were still attending school, compared with half of the other group. Years of education completed at VR entry averaged 10.8 (median 10.6) for the special education group and 11.4 (median 11.1) for the others. The two groups also differed in reading and mathematics achievement levels.[5] In reading, special education youth had an average grade level achievement score of 5.1 (median 4.4), compared with 9.8 (median 10.7) for the other youth. Math achievement levels were 5.2 (median 4.7) and 8.7 (median 8.9), respectively. Achievement levels by disability type appear in **Appendix A, Table A-3**. Across the transitional youth group as a whole, reading achievement level in grade equivalent scores was 7.3 (8.0) for youth with mental illness, 3.5 (3.0) for youth with mental retardation, 6.3 (5.7) for youth with learning disability, and 8.5 (9.0) for youth with other disabilities (including sensory impairments, orthopedic disabilities, and other physical disabilities). Comparable levels in mathematics were as follows: mental illness, 7.3 (6.6); mental retardation, 3.7 (3.5); learning disability, 6.3 (6.0); other disabilities, 7.6 (8.0). The achievement differences between the special education and nonspecial education groups are, in part, attributable to the differences in distribution of disability type.

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[4]The three dimensions of functioning used in these analyses are composite measures derived from items that measure specific aspects of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL). These items are relatively standard across most of the large national surveys of health and disability, including the National Health Interview Survey, Disability Supplement, Survey of Income and Program Participation, and other sources. The VR longitudinal study used these standard items. **Appendix B** contains details regarding the development and statistical power of these scales.

[5]Data on reading achievement levels (as grade levels) were available in the case files for approximately 54.3% percent of transitional youth; data on mathematics achievement levels were available for approximately 52.0% of transitional youth. These data were more frequently available for youth who had received special education services in high school (70.2% versus 39.0% for reading achievement, 75.4% versus 24.6% for mathematics achievement), primarily because the counselors of such youth had typically included documentation from the special education system as part of the VR case file.

Table 5. **Educational Characteristics of Transitional Youth at Entry to VR, by Receipt of Special Education in High School**

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
	Percentage	Percentage	Percentage
Still in school*	70.9	51.5	63.6
	Mean (median)	Mean (median)	Mean (median)
Years of education completed*	10.8 (10.6)	11.4 (11.1)	11.0 (10.8)
	Mean (median)	Mean (median)	Mean (median)
Reading achievement level*	5.1 (4.4)	9.8 (10.7)	6.3 (5.4)
	Mean (median)	Mean (median)	Mean (median)
Mathematics achievement level*	5.2 (4.7)	8.7 (8.9)	6.0 (5.3)

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals with an employment outcome compared to individuals who receive services but did not have an employment outcome.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Receipt of Financial Assistance from Public or Other Sources

Tables 6 and **7** report information on the extent to which transitional youth were receiving some form of financial assistance at entry to and exit from the VR program. As shown, the percentage of these youth whose VR case files indicated receipt of financial assistance remained virtually unchanged from entry to exit. Among youth who had received special education services in high school, one-third (33.3 percent) were receiving assistance at entry to VR, and the same proportion (32.6 percent) continued to receive such assistance following exit from VR services. Fewer of the other transitional youth were receiving such assistance: 18.6 percent at entry and 17.6 percent at exit. Among youth receiving assistance, SSI-Disabled was the most frequent source for both groups, although the nonspecial education youth less frequently received such assistance than did those who participated in special education in high school. At entry, two-thirds of special education youth and 44.1 percent of others receiving any benefits received this benefit. Comparable figures for youth at exit were 67.5 percent and 53.8 percent, respectively. Hence the percentage of both groups receiving this benefit increased from entry to exit, by one percent for special education participants and by nearly 10 percent for other youth. (The actual numbers of youth receiving any of the benefits listed in the tables is relatively small, however, since they reflect the fraction of youth receiving any benefits. For example, 28,042 special education youth [33.3 percent] were reported to be receiving some form of financial assistance at entry to VR; 18,760 [66.9 percent of those with any assistance] were receiving SSI-Disabled at this point.)

Table 6. Transitional Youths' Receipt of Financial Assistance at Entry to VR, by Receipt of Special Education in High School

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
Receipt of financial assistance*	33.3	18.6	27.8
Type of assistance	**Percentage of those receiving financial assistance**	**Percentage of those receiving financial assistance**	**Percentage of those receiving financial assistance**
SSI-Blind	1.4	4.7	2.2
SSI-Disabled*	66.9	44.1	61.0
SSDI	9.8	13.1	10.6
General assistance (welfare)	6.5	15.0	8.6
AFDC	6.4	6.9	6.5
Veteran's disability	0.0	0.0	0.0
Other disability	2.6	3.1	2.7
Other public support	3.6	8.7	4.9
Family and friends*	32.0	20.3	29.1
Workers' compensation	0.0	5.7	1.4
Private relief agency	0.0	0.0	0.0
Private insurance	1.1	4.0	1.9
Public institution (tax-supported)	0.9	0.0	0.7
All other support (excluding wages)*	3.7	1.2	3.0

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

The second most frequently recorded source of assistance was family or friends; receipt of support from this source declined from VR entry to exit for both groups. Among special education youth VR consumers, the change was from 32.0 to 19.3 percent, while for other youth the change was from 20.3 to 7.0 percent. Other sources of support that both groups relied on included SSDI (9.8 percent of special education youth and 13.1 percent of others), general assistance (6.5 percent of special education youth and 15.0 percent of others), and AFDC/TANF (6.4 and 6.9 percent, respectively).

Self-Esteem and Locus of Control

To examine the extent to which selected personal characteristics might be associated with outcomes that VR consumers achieve as a result of receipt of services (see Chapter 4), we administered interviews containing items that support analysis of such factors as self-esteem and psychosocial function. The latter falls into three "locus-of-control" scales, or composites, that measure "chance" (the extent to which one believes that chance controls his/her experiences and

Table 7. Transitional Youths' Receipt of Financial Assistance After Exit from VR, by Receipt of Special Education in High School

	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
Characteristic	**Yes**	**No**	**Total**
Receipt of financial assistance*	32.6	17.6	28.6
Type of assistance	**Percentage of those receiving financial assistance**	**Percentage of those receiving financial assistance**	**Percentage of those receiving financial assistance**
SSI-Blind	2.4	2.5	2.5
SSI-Disabled	67.5	53.8	65.2
SSDI	15.2	4.3	13.4
General assistance (welfare)	8.3	20.8	10.4
AFDC	3.0	10.4	4.2
Veteran's disability	0.0	0.0	0.0
Other disability	0.0	4.6	0.8
Other public support*	6.5	0.0	5.4
Family and friends	19.3	7.0	17.3
Workers' compensation	0.0	3.6	0.6
Private relief agency	0.0	0.0	0.0
Private insurance	0.0	0.0	0.0
Public institution (tax-supported)	1.3	0.0	1.1
All other support (excluding wages)	4.2	8.9	4.9

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

outcomes); "powerful others" (the extent to which a person believes that other people control his/her experiences and outcomes); and "internality" (the extent to which a person believes that he/she has control over his/her life). **Table 8** reports findings on these characteristics separately for transitional youth who participated in special education in high school and those who did not receive such services, as well as for the overall group of transitional youth who were VR consumers. As shown, at entry into the longitudinal study, youth who received special education in high school were different on three of the four measures compared with the other group: self-esteem, chance, and powerful others; that is, the special education group had lower self-esteem and perceived that chance and powerful others played an important role in their experiences and outcomes. They also scored lower on internality, although that difference was not statistically significant. (Later sections of this report examine the effects of these measures on employment outcomes.)

Table 8. Self-Esteem and Locus of Control Among Transitional Youth at Entry to the Study, by Receipt of Special Education in High School

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
	Mean	Mean	Mean
Self-esteem*	2.53	2.67	2.59
Locus of control:			
Chance*	1.86	1.56	1.72
Powerful others*	1.77	1.51	1.65
Internality	2.47	2.52	2.50

Transitional youth are persons who are 25 years old or younger.

*Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

The self-esteem scale and the three locus of control scales are composite measures derived from items on psychosocial functioning. Each scale ranges from 1 to 3. Items were coded so that a higher score indicates more of the given characteristic.

Sample items for each scale appear below.

Self-esteem:

I feel that I am a person of worth, at least equal with others.

All in all, I am inclined to feel that I am a failure.

Chance:

Measures the extent to which a person believes that chance controls his/her experiences and outcomes

Whether or not I get into a car accident is mostly a matter of luck.

It's chiefly a matter of fate whether or not I have a few friends or many friends.

Powerful others:

Measures the extent to which a person believes that other people control his/her experiences and outcomes

If important people were to decide they didn't like me, I probably wouldn't make many friends.

Although I might have good ability, getting ahead depends on who you know, not what you know.

Internality:

Measures the extent to which a person believes that he/she has control over his/her own life

How many friends I have depends on how nice a person I am.

Whether or not I get into a car accident depends mostly on how good a driver I am.

Employment History[6]

As shown in **Table 9** and **Figure 3**, one-fourth of youth VR consumers who were special education students in high school had never worked prior to application for VR services, compared with 14.5 percent of other youth VR consumers. Further, special education students who had ever worked were more likely to have not worked in the two years prior to application, compared with

[6]The task force's questions calls for analysis of current employment status as well as work history; we cover work history in this chapter. Chapter 4 contains detailed analyses on employment and other outcomes among youth VR consumers.

Table 9. Work History of Transitional Youth at Application to VR, by Receipt of Special Education in High School

Work History	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
	Percentage	Percentage	Percentage
Never worked*	24.6	14.5	20.8
Worked, not in 2 years prior to application*	21.7	13.0	18.4
Worked in 2 years prior to application, not working at application	28.8	34.8	31.1
Working at application*	24.9	37.7	29.7
Total	100.0	100.0	100.0

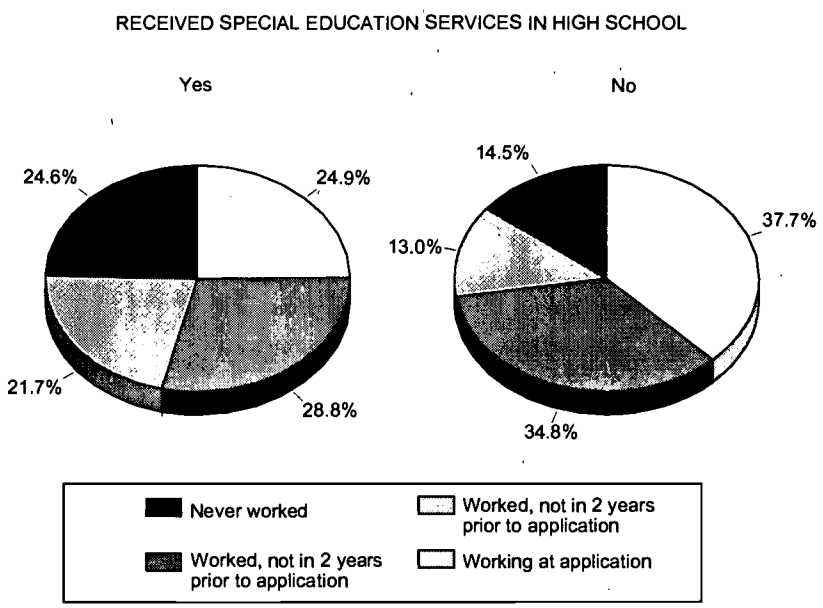
Transitional youth are persons who are 25 years old or younger.

*Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Figure 3. Work History of Transitional Youth at Application to VR, by Receipt of Special Education in High School



Source: VR Longitudinal Study, November 1999

other transitional youth (21.7 versus 13.0 percent). Finally, they less often were working at application (24.9 percent versus 37.7 percent of nonspecial education youth).

Summary

Transitional youth, or youth under 25 years of age, represent 13.5 percent of all VR consumers. Among these youth, nearly two-thirds had participated in special education in high school, and about the same percentage (63.9 percent) had been referred to VR by an educational institution, with youth who were special education students more often referred by this source (74 versus 47.5 percent). More youth who had been special education students, in comparison with their peers who had not received special education, were male (61.6 versus 52.9 percent), African-American (21.2 versus 10.3 percent), and mentally retarded (32.9 versus 1.2 percent) or learning disabled (40.2 versus 12.9 percent). While both groups had disabilities that were classified as significant or most significant, special education students' disabilities were more frequently congenital rather than acquired (81.3 versus 34.3 percent).

Youth VR consumers who received special education in high school were more likely than their other peers to be in school at the time of application to VR (70.9 versus 51.5 percent), to have completed fewer years of school, and to have lower grade level equivalent achievement in reading (5.1 versus 9.8) and mathematics (5.2 versus 8.7). More special education students than nonspecial education students in this population received SSI-Disabled both at entry to VR (66.9 percent versus 44.1 percent) and following exit (67.5 versus 53.8 percent), though the gap narrowed following exit. They were lower in self-esteem and perceived themselves to be more controlled by chance and other people than youth VR consumers who had not received special education services in high school. Finally, the groups differed in work history: 24.6 percent of youth special education students had never worked, compared to 14.5 percent of other youth, and fewer were working at application to VR (24.9 versus 37.7 percent).

Chapter 3: Selected Aspects of the VR Experience

As noted in the previous chapter, a substantial proportion (64 percent overall, and 74 percent of youth special education students) of transition-aged youth were referred to the VR program by an educational institution. Further, 64 percent (and 71 percent of special education students) were still in school at time of their application to VR. Of interest to policymakers involved in efforts to improve the educational and employment outcomes of youth with disabilities is the extent to which youths' participation in VR facilitates their transition from high school and the special education system to postschool education, training, and other services that will subsequently improve their likelihood of achieving meaningful labor force participation and personal independence and integration as adults. In this chapter, we report analyses that examine some of these issues, in response to the following questions raised by the task force:

> **Question 2:** What reasons do transitional youth have for applying for VR services? What job or vocational interest(s) do they express? How do they differ according to special education status?
>
> **Question 3:** For special education and nonspecial education students, what types of services and financial assistance did transition-age VR consumers receive? What are the primary sources of support for these groups?
>
> **Question 4:** To what extent are families and/or advocates involved in the VR process for individuals who had received special education services versus those who had not?
>
> **Question 5**: What variables are associated with attrition for individuals who had received special education? What are the employment outcomes, public assistance statuses, and satisfaction levels of individuals who have left without receiving or completing VR services; how does that attrition compare with the attrition of transition-age individuals who did not receive special education?

Reasons for Seeking VR Services[7]

As documented in their case files, nearly two-thirds of transitional youth overall reported that they applied to VR in order to obtain job placement services (**Table 10**). Over half reported that they wanted to obtain vocational training (59.9 percent) or support for education (51.4 percent). Over half also reported that they applied to VR on the basis of a recommendation from another agency or organization (55.2 percent).

[7]Unless otherwise noted, all comparisons/differences appearing in the text are statistically significant at a probability level of .05 or lower. All significant differences are also indicated in each table with asterisks.

Table 10. Transitional Youths' Reasons for Applying for VR Services, by Receipt of Special Education in High School[a]

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
Reasons for applying for VR services	**Percentage**	**Percentage**	**Percentage**
To obtain medical treatment*	2.4	8.9	4.8
To obtain some type of assistive technology device or service	3.3	6.5	4.5
To obtain job placement services	68.2	61.3	65.7
To obtain job retention services for current job	3.4	3.0	3.2
To obtain vocational training	62.7	55.2	59.9
To obtain support for education*	43.1	65.3	51.4
To obtain counseling or psychotherapy	19.2	27.2	22.2
Required by Social Security	0.9	0.7	0.8
Recommended by Worker's Compensation	0.4	0.2	0.3
Recommended by another agency or organization	58.2	50.1	55.2
Recommended by a friend*	2.8	8.9	5.1
Recommended by a family member	4.9	3.7	4.5
Client appears to be unclear about his/her motives*	11.4	2.4	8.0
Cannot be determined*	11.3	4.3	8.7

[a] Multiple responses were possible.

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Reasons for application differed somewhat according to whether youth had been special education students in high school. Youth who had not been such students more often sought VR services to obtain support for education (65.3 versus 43.1 percent) or to obtain medical treatment (8.9 versus 2.4 percent) than did special education students. While the difference was not statistically significant, nonspecial education youth more often sought counseling or psychotherapy than did youth who had been special education students (27.2 versus 19.2 percent). They more frequently came to VR via the recommendation of a friend.

As shown in **Table 11**, youth VR consumers' vocational goals most frequently targeted employment in professional/managerial/technical fields (39.7 percent of all youth), services (24.1 percent), or clerical/sales positions (12.2 percent). The goals of youth who were special education students differed from those of other youth: the former group more often developed goals in services (31.0 percent versus 12.8 percent) and less frequently in professional/managerial/technical occupations (25.3 percent versus 63.0 percent). Both groups selected clerical/sales occupations at

Table 11. Vocational Goals of Transitional Youth, by Receipt of Special Education in High School

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
	Yes	No	Total
Initial vocational goal	**Percentage**	**Percentage**	**Percentage**
Professional/managerial/technical*	25.3	63.0	39.7
Clerical/sales	12.7	11.2	12.2
Services*	31.0	12.8	24.1
Agriculture/fishing/forestry	2.4	1.8	2.2
Processing	1.8	0.6	1.3
Machine trades	2.7	1.3	2.2
Benchwork*	10.5	3.4	7.8
Structural work*	5.8	2.2	4.4
Miscellaneous*	4.1	1.3	3.0
Other	3.6	2.1	3.0
Homemaker	0.0	0.3	0.1
Total	100.0	100.0	100.0
Percentage of youth who changed their vocational goal after initial Individualized Plan for Employment (IPE)	18.5	15.8	17.5
Final vocational goal (whether or not changed)	**Percentage**	**Percentage**	**Percentage**
Professional/managerial/technical*	22.9	58.3	36.3
Clerical/sales	13.4	13.5	13.5
Services*	31.6	13.1	24.6
Agriculture/fishing/forestry	2.9	1.3	2.3
Processing	2.1	0.9	1.6
Machine trades	1.8	1.7	1.8
Benchwork*	12.3	4.3	9.3
Structural work*	5.1	2.3	4.0
Miscellaneous	4.4	2.4	3.7
Other	3.2	2.1	2.8
Homemaker	0.3	0.3	0.3
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

*Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

about the same rate (12.7 and 11.2 percent, respectively). Special education youth selected other occupations more frequently, including benchwork, structural work, and miscellaneous occupations. While relatively few youth changed their goal after the initial IPE development process, more youth who had received special education services did so, although the difference was not significant (18.5 versus 15.8 percent).

Services and Supports

The VR longitudinal study collected information on services that consumers obtained either directly from VR counselors and other agency staff or from other providers, for which VR staff arranged for the services but did not provide them. Services listed in **Table 12** fall into both categories, with some minor overlap. VR staff deliver IWRP (more recently IPE) services, counseling, guidance, and placement services, and some of the diagnostic and evaluation services that youth VR consumers received. Services that VR staff primarily or entirely arrange with other providers include education and training, physical and mental restoration, transportation, housing, and maintenance, and other (e.g., tools and equipment) services. The table indicates both the percentage of youth who received services in these categories, and the average number of services each youth received from each group and overall. As shown, all youth VR consumers received approximately the same numbers of services: special education students received an average of 8.0 services, while other youth averaged 7.9. Special education youth more often received diagnostic

Table 12. Types of VR services that Youth VR Consumers Obtained, by Receipt of Special Education in High School

Type of service	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL					
	Yes		No		Total	
	Mean (median)	Percentage receiving service	Mean (median)	Percentage receiving service	Mean (median)	Percentage receiving service
IWRP	1.2 (1.0)	80.4	1.1 (1.0)	77.8	1.2 (1.0)	79.5
Counseling, guidance, and placement services	1.8 (1.0)	94.7	1.7 (1.0)	93.9	1.8 (1.0)	94.4
Diagnostic and evaluation services†	2.2 (2.0)	85.5	1.9 (1.0)	71.9	2.1 (2.0)	80.4
Education and training services*	1.2 (0.0)	45.0	2.0 (1.0)	55.1	1.5 (1.0)	48.8
Physical and mental restoration services	0.3 (0.0)	12.2	0.3 (0.0)	17.6	0.3 (0.0)	14.3
Transportation, housing, and maintenance services†	0.9 (0.0)	25.4	0.7 (0.0)	17.7	0.8 (0.0)	22.5
Other services	0.3 (0.0)	10.8	0.2 (0.0)	7.1	0.2 (0.0)	9.4
All services	8.0 (7.0)	--	7.9 (7.0)	--	8.0 (7.0)	--
Cost of purchased services	$1559 ($531)		$2099 ($755)		$1782 ($640)	
Comparable benefits expenditures*	$1348 ($648)		$3319 ($2200)		$2322 ($1338)	

Transitional youth are persons who are 25 years old or younger.

*Indicates a significant difference between the mean for individuals who received special education services and the mean for individuals who did not receive special education services.

†Indicates a significant difference between the percentage of individuals receiving each service for individuals who received special education services and the percentage receiving each service for individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

and evaluation services (85.5 percent received these services, compared with 71.9 percent of other youth) and transportation, housing, and maintenance (25.4 versus 17.7 percent). Nonspecial education youth more often received education and training services (55.1 compared with 45.0 percent), and averaged more of these services (2.0 versus 1.2) than transitional youth who were special education students.

Table 12 also reports information on average cost of purchased services, as well as value of comparable benefits, for transitional youth VR consumers. For youth VR consumers overall, cost of purchased services was $1,782 (median of $640). Average cost for special education students was lower than that for others ($1,559 [median of $531] versus $2,099 [median of $755]), although the difference was not statistically significant. Value of comparable benefits expenditures averaged $2,322 (median $1,338). Average comparable benefits for special education students were lower than those for others ($1,348 compared to $3,319), a statistically significant difference explained in part by the higher proportion of other youth consumers who enrolled in postsecondary education.

Family Involvement

For approximately one-fourth of VR youth consumers, family members participated in the VR process; this involvement took a variety of forms, such as assistance in decisions about vocational goals and services, participation in meetings, or periodic telephone contacts. **Table 13** reports nature and extent of family involvement in the VR process for youth VR consumers overall and for the subgroups of special education students and others. As shown, special education youth were more than twice as likely to have their family involved in their services (33.4 percent, compared with 14.4 percent of other youth). Family of both groups of youth consumers typically attended meetings with the VR counselor: for special education students, this type involvement occurred for 81.6 percent of youth; for the other group, family members participated in meetings for 71.6 percent of youth.

In general, family involvement was greater for youth consumers who had received special education services in high school than it was for other youth. For the youth for whom family members participated in decisions, types of such involvement included assistance with selection of the vocational goal (45.4 versus 18.2 percent), assistance with determination of what services would be provided (51.5 percent versus 28.5 percent), and assistance in selection of service providers (42.5 versus 22.7 percent). Special education students' families also more often maintained telephone contacts with service providers, although the difference was not statistically significant (35.3 versus 25.0).

Attrition

To examine factors that might be associated with attrition among youth VR consumers who received special education services in high school, we conducted a series of analyses that compared

Table 13. Family Involvement in VR Services of Transitional Youth, by Receipt of Special Education in High School[a]

Characteristic	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL Yes	No	Total
Percentage of students with family involvement in VR consumers' services	33.4	14.4	26.2
Type of involvement	**Percentage of those reporting involvement**	**Percentage of those reporting involvement**	**Percentage of those reporting involvement**
Assisted with selection of vocational goal*	45.4	18.2	39.8
Assisted with determination of services to be provided*	51.5	28.5	46.8
Assisted with selection of service providers*	42.5	22.7	38.4
Attended meetings between the VR counselor and client	81.6	71.6	79.5
Maintained telephone contacts with the VR counselor	72.1	83.7	74.4
Maintained telephone contacts with service providers	35.3	25.0	33.1
Other	11.7	8.7	11.1

[a] Multiple responses were possible.

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

these youth who left VR without receiving or completing VR services with comparable youth who achieved an employment outcome as a result of VR services. Among the factors we examined were demographic and disability characteristics, functional status, education attainment and achievement levels, financial assistance, and psychosocial factors. Because we found very few significant differences between the two groups, we do not include the results of those analyses in this report.[8]

Summary

Transitional youth typically applied to VR in order to obtain services that would assist them in labor force entry. Such services included job placement (two-thirds of youth VR consumers), vocational training (60 percent), and support for education (51 percent). Youth who did not receive special education services in high school more often sought support to continue their education than did their special education peers (65 versus 43 percent). In general, youth VR consumers established

[8] Some of the information listed in the question is not available in the study. For example, for persons who dropped out prior to services, the study did not collect satisfaction with VR.

vocational goals in one of three occupational fields: professional/ managerial/technical (40 percent overall, 25 percent of special education youth and 63 percent of others); services (24 percent overall, 31 percent of special education youth and 13 percent of others); or clerical/sales occupations (12 percent overall, 13 percent of special education youth and 11 percent of others). Relatively few youth VR consumers (18 percent) changed their vocational goal following initial IPE development.

Both groups of youth VR consumers averaged about 8.0 services during VR. The two groups did differ somewhat in types of services they obtained as VR consumers. While nearly all of both groups obtained counseling, guidance, and placement services (95 and 94 percent, respectively), more special education students obtained diagnostic and evaluation services (85 versus 72 percent) and transportation, housing, and maintenance services (25 versus 18 percent). More nonspecial education youth obtained support for education (55 versus 45 percent) and averaged more of those services (2.0 versus 1.2). Average cost of purchased services was $1,782.

About one-third of special education students involved family members in their VR experience, compared with 14 percent of other youth. Among activities families assisted with were selection of vocational goal, determination of services to be provided, and selection of service providers.

Finally, special education students who left VR before receiving or completing services did not differ significantly from those who completed services or from nonspecial education peers on demographic or other characteristics.

Chapter 4: Consumer Outcomes

Achievement of an employment outcome is the key measure of effectiveness for the VR services program. Of particular interest is quality of employment, typically assessed by earnings levels, whether the employment is competitive, and retention of employment over time. Other measures of effectiveness include consumer satisfaction with VR services and outcomes, extent to which former consumers improved in functional status and other measures, reduction in dependency on public assistance, and the like. In this chapter we report on outcomes that transitional youth achieved as a result of VR services. Questions we address include:

Question 6: What sociodemographic, disability, education, program participation, and self-esteem factors are associated with employment outcomes and earnings levels for young adult VR program participants?

a. To what extent are sociodemographic factors (i.e., sex, race, family income) associated with employment for young adults with disabilities?

b. To what extent are disability factors (i.e., difficulties with ADLs and/or IADLs) associated with employment for young adults with disabilities?

c. To what extent are education factors (i.e., completed years, special education, literacy levels) associated with employment?

d. To what extent are program participation factors (i.e., SSI) associated with employment?

e. To what extent are what are the self-esteem factors (i.e., locus of control, attitudes) associated with employment?

f. To what extent is consumer satisfaction associated with an employment outcome?

Question 7: Of individuals who received special education services and were accepted for VR services, what were their gains in terms of employment, functional capacities, and reduction in public dependency?

Overview of Employment Outcomes[9]

As reported in **Table 14**, 62.8 percent of youth VR consumers achieved an employment outcome as a result of VR services.[10] While youth who received special education in high school achieved an employment outcome at a slightly higher rate (64.2 percent compared with 59.1 percent),

[9]Unless otherwise noted, all comparisons/differences appearing in the text are statistically significant at a probability level of .05 or lower. All significant differences are also indicated in each table with asterisks.

[10]As noted in Chapter 2, about one-fourth of youth VR consumers were still receiving services at the time of these analyses; consequently, findings on outcomes may change somewhat following completion of data collection.

Table 14. Employment Characteristics of Transitional Youth With an Employment Outcome, by Receipt of Special Education in High School

	RECEIVED SPECIAL EDUCATION SERVICES IN HIGH SCHOOL		
Characteristic	**Yes**	**No**	**Total**
Percentage of individuals exiting VR with an employment outcome after receiving services	64.2	59.1	62.8
Job type for job at closure (all employment outcomes)	**Percentage**	**Percentage**	**Percentage**
Competitive employment[a]*	81.3	98.6	85.6
Sheltered work/extended employment*	6.2	0.0	4.7
Self-employment	0.0	1.4	0.3
Supported employment*	10.7	0.0	8.0
Homemaker	1.3	0.0	1.0
Other	0.5	0.0	0.4
Total	100.0	100.0	100.0
Hours worked and hourly wages (competitively employed only)	**Mean (median)**	**Mean (median)**	**Mean (median)**
Hours worked per week*	33.6 (40.0)	37.1 (40.0)	34.6 (40.0)
Hourly wages*	$5.57 ($5.00)	$6.47 ($5.50)	$5.81 ($5.16)
Range in earnings	**Percentage**	**Percentage**	**Percentage**
< $5 hour*	52.5	34.1	47.5
$5 - $7 hour	35.8	40.3	37.0
>$7 hour	11.8	25.6	15.5
Total	100.0	100.0	100.0
Type of Occupation (competitively employed only)	**Percentage**	**Percentage**	**Percentage**
Professional/managerial/technical*	6.4	20.6	10.4
Clerical/sales	21.7	23.1	22.1
Services	35.4	24.7	32.4
Agriculture/fishing/forestry	3.2	2.7	3.0
Processing	3.4	4.9	3.8
Machine trades	6.8	5.7	6.5
Benchwork	11.4	9.6	10.9
Structural work	7.7	5.1	7.0
Miscellaneous	4.1	3.6	3.9
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

[a]Competitive employment includes jobs in the open labor market for which persons with disabilities and persons without disabilities compete.

*Indicates a significant difference ($p<.05$) in either the mean or the percentage of individuals who received special education services compared to individuals who did not receive special education services.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

this difference was not statistically significant. Overall, 85.6 percent of youth consumers with an employment outcome entered competitive employment; special education consumers less frequently entered the competitive labor market than other youth consumers (81.3 compared with 98.6 percent). Youth who had received special education in high school more often entered sheltered work (6.2 percent versus less than 1 percent) or supported employment (10.7 percent versus less than 1 percent).

Youth who entered competitive jobs earned an average of $5.81 per hour (median of $5.16) and worked nearly 35 hours per week (median of 40.0 hours). Youth in competitive jobs who received special education in high school worked fewer hours (33.6 versus 37.1) and earned less per hour ($5.57 [$5.00] compared to $6.47 [$5.50]) than did other youth VR consumers. We also present ranges in hourly earnings. As shown, over half of competitively employed youth VR consumers who received special education services in high school averaged less than $5.00 per hour, compared with one-third of other youth (52.5 versus 34.1 percent). More than twice as many nonspecial education youth who achieved competitive employment were earning more than $7.00 per hour than were youth who were special education students (25.6 versus 11.8 percent), although this difference was not statistically significant.

For the most part, the occupations that youth in the two groups entered did not differ greatly, with the exception of professional/managerial/technical occupations. Only 6 percent of special education students entered these fields, compared with 21 percent of other youth. Both groups frequently entered service occupations (35.4 percent of special education youth and 24.7 percent of others). Both groups also frequently obtained clerical/sales positions (21.7 and 23.1 percent, respectively).

Factors Associated with Employment Outcomes

We conducted multiple regression analyses to predict employment outcomes from (1) the set of demographic and participation variables described in Chapter 2 (i.e., demographic and disability characteristics, education and work history, financial assistance, self-esteem and locus of control); (2) types of services youth VR consumers received in VR; and (3) whether or not youth VR consumers were receiving public financial assistance (e.g., SSI/DI, general assistance) at entry to VR. We conducted separate analyses for special education and nonspecial education recipients and used two outcome variables: employment outcome and competitive employment outcome. The purpose of these regression analyses was to investigate the factors that may influence the employment outcomes (i.e., whether the consumer achieved an employment outcome and whether the employment was competitive) for transitional youth who are VR consumers. Because we hypothesized that the influences would be somewhat different for those who received special education services in high school versus those who did not, we ran these analyses separately for the two groups. The results of these analyses appear in **Table 15**.

Table 15. Relationships Between Consumer Characteristics and VR Employment and Competitive Employment Outcomes: Model R^2 and Unstandardized Weights for Multiple Regression Analyses Using Consumer Characteristics and VR Experiences as Influencing Factors

Model	Influencing Factor	Unstandardized Weight	R^2	p
Employment outcome			.049	<.01
Special education recipients	Working at application	+.17		
	Gross motor function	+.37		
	Education/training services	+.10		
Employment outcome			.269	<.0001
Nonspecial education recipients	Working at application	+.19		
	Self-esteem	+.20		
	Physical/mental restoration services	+.21		
	Public financial assistance	-.48		
Competitive employment outcome			.197	<.0001
Special education recipients	Female	-.18		
	Gross motor function	+.37		
	Cognitive function	+.44		
	Personal care function	-3.14		
	Education/training services	+.11		
	Public financial assistance	-.25		
Competitive employment outcome			.254	<.0001
Nonspecial education recipients	Female	+.16		
	Significant/most significant disability	-.15		
	Learning disability	+.25		
	Cognitive function	+.52		
	Belief in control by others	+.13		
	Diagnostic/evaluation services	+.20		
	Public financial assistance	-.29		

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Factors that influence achievement of an employment outcome for youth VR consumers who had received special education services in high school included working at application to VR, relatively higher status on gross motor functioning, and receipt of education/training services in VR. That is, among these youth, those who were working at application, those with higher gross motor functioning, and those who received education or training services were significantly more likely than their peers to achieve an employment outcome. Although these factors together accounted for only about five percent (R^2=.049) of the variance in employment outcomes, this level of prediction was statistically significant at the $p<.01$ level.

For other youth VR consumers (i.e., those who did not participate in special education in high school), a number of factors were significantly associated with achievement of an employment

outcome. These included working at application, relatively higher self-esteem, and receipt of physical or mental restoration services in VR. In addition, receipt of public financial assistance at entry to VR was negatively associated with obtaining an employment outcome. Altogether, these factors accounted for about 27 percent of the variance in employment outcomes for these youth, which is highly significant ($p<.0001$).

In terms of competitive employment outcomes, factors that influenced whether or not special education students who were VR consumers obtained competitive employment included relatively higher gross motor function, relatively higher cognitive function, and receipt of education or training services in VR. Gender (female), personal care function, and receipt of public financial assistance at entry to VR were negative influences on achievement of a competitive employment outcome. These combined factors accounted for about 20 percent of the variance in competitive employment outcomes and were highly significant ($p<.0001$).

Among nonspecial education recipients, significant positive factors influencing achievement of competitive employment outcomes included gender (female), having a learning disability versus another type of disability, relatively higher cognitive function, a belief that others exert control over one's experiences and accomplishments, and receipt of diagnostic or evaluation services in VR. Presence of a disability that is significant/most significant and receipt of public financial assistance at entry to VR were negatively associated with competitive employment outcomes for this group. Together, these factors accounted for over 25 percent of the variance in competitive employment outcomes for these youth and were highly significant ($p<.0001$).

We note that these latter three prediction models each achieve a level of prediction that is very strong, accounting for 20 percent or more of the variance in outcomes. This level of prediction is unusual in social science research.

Satisfaction with VR Services

In addition to examination of employment outcomes that transitional youth VR consumers achieved as a result of VR services, we collected information on satisfaction with key aspects of the VR process. In this section, we report our findings regarding satisfaction with five dimensions of VR: (1) job or goal the consumer was working toward; (2) choice of services that the agency offered (3) choice of service providers available to the consumer; and (4) quality of services that the agency provided or arranged; and (5) overall satisfaction with VR services. As with other issues covered in this report, we report findings on satisfaction separately for youth VR consumers who received special education services in high school and for those who did not receive such services.

Table 16 reports levels of satisfaction for special education students based on whether or not they achieved an employment outcome as a result of VR services. Overall, satisfaction with VR among youth consumers who participated in special education in high school was high, ranging from

Table 16. Satisfaction with VR of Transitional Youth who Received Special Education Services in High School, by Closure Status

Question	Employment Outcome: Received services, achieved an employment outcome	Employment Outcome: Received services, failed to achieve an employment outcome	Total
How did you feel about the job or goal you were working toward?			
Very/somewhat satisfied*	84.3	65.0	78.3
Indifferent*	2.5	14.6	6.2
Very/somewhat dissatisfied	13.2	20.4	15.5
Total	100.0	100.0	100.0
How did you feel about the choice of services made available to you?			
Very/mostly satisfied*	82.5	55.3	74.4
Indifferent	9.0	16.9	11.3
Very/mostly dissatisfied*	8.5	27.8	14.3
Total	100.0	100.0	100.0
Were you satisfied with the available choice of providers?			
Very/mostly satisfied*	81.0	62.5	75.3
Indifferent	9.0	10.8	9.5
Very/mostly dissatisfied*	10.1	26.7	15.2
Total	100.0	100.0	100.0
How would you rate the quality of services you received from the VR agency?			
Excellent*	35.4	20.9	30.9
Good	44.6	30.9	40.4
Fair	19.0	29.3	22.1
Poor*	1.0	19.0	6.5
Total	100.0	100.0	100.0
Overall, how satisfied were you with the services you received from VR?			
Very/mostly satisfied*	85.7	60.2	78.0
Indifferent*	3.7	17.1	7.8
Very/mostly dissatisfied	10.6	22.7	14.3
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who achieved an employment outcome compared to individuals who did not achieve an employment outcome.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

78 percent who were very or mostly satisfied with their vocational goal and with their overall VR services to 74 percent who were very or mostly satisfied with available choice of services. As might be expected, youth who achieved an employment outcome were consistently more satisfied with their experience in VR than were those who failed to achieve an employment outcome following receipt of VR services. As shown, successful youth were more consistently satisfied with their vocational goal (84.3 versus 65.0 percent), the choice of services made available to them (82.5 versus 55.3 percent),

the available choice of providers (81.0 versus 62.5 percent), the quality of services (35.4 versus 20.9 percent rated services as excellent), and overall satisfaction with VR (85.7 versus 60.2 percent).

Table 17 contains findings on consumer satisfaction for youth VR consumers who did not receive special education services in high school. Overall satisfaction levels with this group were again relatively high, ranging from 84 percent very or mostly satisfied with vocational goal to

Table 17. Satisfaction with VR of Transitional Youth who Did Not Receive Special Education Services in High School, by Closure Status

	Employment Outcome		
Question	Received services, achieved an employment outcome	Received services, failed to achieve an employment outcome	Total
How did you feel about the job or goal you were working toward?			
Very/somewhat satisfied	84.6	82.5	83.8
Indifferent	1.1	11.7	5.3
Very/somewhat dissatisfied	14.4	5.8	11.0
Total	100.0	100.0	100.0
How did you feel about the choice of services made available to you?			
Very/mostly satisfied	71.3	74.8	72.7
Indifferent	10.7	10.2	10.5
Very/mostly dissatisfied	17.9	15.0	16.8
Total	100.0	100.0	100.0
Were you satisfied with the available choice of providers?			
Very/mostly satisfied	78.6	86.6	81.9
Indifferent	13.3	1.5	8.4
Very/mostly dissatisfied	8.1	11.9	9.7
Total	100.0	100.0	100.0
How would you rate the quality of services you received from the VR agency?			
Excellent*	58.2	12.7	39.9
Good	29.2	55.2	39.7
Fair	7.0	23.4	13.6
Poor	5.6	8.7	6.8
Total	100.0	100.0	
Overall, how satisfied were you with the services you received from VR?			
Very/mostly satisfied*	88.0	58.8	76.2
Indifferent	6.5	18.8	11.4
Very/mostly dissatisfied	5.6	22.4	12.4
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who achieved an employment outcome compared to individuals who did not achieve an employment outcome.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

73 percent very or mostly satisfied with available choice of providers. The table also compares these findings for youth who achieved an employment outcome and those who failed to achieve such an outcome following receipt of VR services. For three of the five dimensions — vocational goal, choice of services, choice of providers — the two groups were very similar in their levels of satisfaction. For example, on choice of vocational goal, 84.6 percent of youth who achieved an employment outcome were very or mostly satisfied, compared with 82.5 percent of those who failed to achieve an employment outcome. The two groups differed, however, on their ratings of the quality of services and their level of satisfaction overall with VR services. On the former 58.2 percent of successful consumers rated service quality excellent, compared with only 12.7 percent of unsuccessful consumers. On overall satisfaction, 88.0 percent of successful consumers were very or mostly satisfied compared with 58.8 percent for the group who failed to achieve an employment outcome.

Tables 18 and **19** present analyses parallel to those above, but comparing competitively employed consumers with all others (i.e., persons who failed to achieve an employment outcome following VR services and those who achieved an employment outcome that was not competitive; about 15 percent of youth VR consumers who achieved an employment outcome entered noncompetitive employment). As shown in **Table 18**, levels of satisfaction among youth VR consumers who were special education students were generally over 70 percent for all dimensions irrespective of competitive employment outcome, with 78 percent very/mostly satisfied with services overall and with their vocational goal, and three-quarters satisfied with choice of services and choice of providers. Special education students who achieved a competitive employment outcome did not differ much on satisfaction from those who either failed to achieve an employment outcome at all or achieved noncompetitive employment. The two groups were similar in satisfaction with choice of services (72.7 and 78.3 percent, respectively), choice of providers (77.0 and 71.3 percent), satisfaction with services overall (78.6 and 76.5 percent), and vocational goal (81.8 and 70.6 percent). None of these differences was statistically significant.

Table 19 reports satisfaction levels for nonspecial education recipients, separately for competitively employed consumers and for those who either did not achieve an employment outcome or became noncompetitively employed. Overall satisfaction levels were again relatively high across the two groups, ranging from 83.8 percent on vocational goal to 72.7 percent on choice of services. The two groups differed on two dimensions of satisfaction. Nonspecial education youth who entered competitive employment rated quality of services higher than did the other group: 49.3 percent of competitively employed youth rated services as excellent, compared to 17.8 percent of the other group. Very few of either group rated services as poor, however (6.5 and 7.7 percent, respectively). In terms of overall satisfaction with VR services, 83.5 percent of competitively employed consumers were very/mostly satisfied, while only 59.2 percent of the other group were very/mostly satisfied.

Table 18. Satisfaction with VR of Transitional Youth who Received Special Education Services in High School, by Type of Employment

Question	Type of Employment: Closed into competitive employment	Type of Employment: Closed without an employment outcome or into non-competitive employment	Total
How did you feel about the job or goal you were working toward?			
Very/somewhat satisfied	81.8	70.6	78.3
Indifferent	3.8	11.6	6.2
Very/somewhat dissatisfied	14.4	17.9	15.5
Total	100.0	100.0	100.0
How did you feel about the choice of services made available to you?			
Very/mostly satisfied	72.7	78.3	74.4
Indifferent	13.0	7.6	11.3
Very/mostly dissatisfied	14.3	14.1	14.3
Total	100.0	100.0	100.0
Were you satisfied with the available choice of providers?			
Very/mostly satisfied	77.0	71.3	75.3
Indifferent	9.9	8.5	9.5
Very/mostly dissatisfied	13.1	20.2	15.2
Total	100.0	100.0	100.0
How would you rate the quality of services you received from the VR agency?			
Excellent	32.9	26.5	30.9
Good	42.6	35.6	40.4
Fair	20.4	25.8	22.1
Poor*	4.0	12.1	6.5
Total	100.0	100.0	100.0
Overall, how satisfied were you with the services you received from VR?			
Very/mostly satisfied	78.6	76.5	78.0
Indifferent	6.0	11.8	7.8
Very/mostly dissatisfied	15.4	11.7	14.3
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who achieved a competitive employment outcome compared to individuals who did not achieve a competitive employment outcome.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table 19. Satisfaction with VR of Transitional Youth who Did Not Receive Special Education Services in High School, by Type of Employment

Question	Type of Employment: Closed into competitive employment	Type of Employment: Closed without an employment outcome or into non-competitive employment	Total
How did you feel about the job or goal you were working toward?			
Very/somewhat satisfied	82.7	86.2	83.8
Indifferent	3.0	10.3	5.3
Very/somewhat dissatisfied	14.3	3.5	11.0
Total	100.0	100.0	100.0
How did you feel about the choice of services made available to you?			
Very/mostly satisfied	76.3	64.2	72.7
Indifferent	6.4	20.3	10.5
Very/mostly dissatisfied	17.4	15.5	16.8
Total	100.0	100.0	100.0
Were you satisfied with the available choice of providers?			
Very/mostly satisfied	82.9	79.4	81.9
Indifferent	8.7	7.7	8.4
Very/mostly dissatisfied	8.4	12.9	9.7
Total	100.0	100.0	100.0
How would you rate the quality of services you received from the VR agency?			
Excellent*	49.3	17.8	39.9
Good*	29.8	62.7	39.7
Fair	14.4	11.8	13.6
Poor	6.5	7.7	6.8
Total	100.0	100.0	100.0
Overall, how satisfied were you with the services you received from VR?			
Very/mostly satisfied*	83.5	59.2	76.2
Indifferent	5.5	25.2	11.4
Very/mostly dissatisfied	10.9	15.6	12.4
Total	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) in either the mean or the proportion of individuals who achieved a competitive employment outcome compared to individuals who did not achieve a competitive employment outcome.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Changes in Selected Conditions Among Special Education Recipients

Among the conditions of interest are change from VR acceptance to closure in employment status, functional capacities, and receipt of public financial assistance. Our analyses of these outcomes focus on youth VR consumers who received special education services in high school. For employment, we examined change in employment status from application to closure for all special education youth who received VR services. For the other outcomes, we examined youth who obtained an employment outcome and those who were not successful in obtaining employment separately.

Table 20 contains the results of these analyses. As shown, youth VR consumers who received special education services in high school made a significant gain in employment status from VR application to closure. At application, 25 percent of these youth were working; at closure, 64.2 percent had achieved an employment outcome. We found no significant differences in functional status from application to closure for either those who achieved an employment outcome or those who did not. Receipt of public financial assistance did not change for the group who achieved an employment outcome. However, among youth who did not achieve an employment outcome, the reduction in receipt of public assistance from VR entry to closure was significant: at entry, 30 percent of this group was receiving such assistance. By closure, that figure had declined to 20 percent.

Table 20. Changes from Acceptance to Closure on Selected Conditions for Youth VR Consumers Who Received Special Education Services in High School

	All Consumers					
Condition	**At Entry**	**At Closure**	**Change**			
	Percentage	**Percentage**	**Percentage**			
Employment	24.9	64.2	39.3*			
	Consumers who achieved an employment outcome			**Consumers who failed to achieve an employment outcome**		
Functional status	**At Entry**	**At Closure**	**Change**	**At Entry**	**At Closure**	**Change**
	Mean	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
Gross motor function	1.95	1.93	NS	1.91	1.86	NS
Cognitive function	1.73	1.69	NS	1.75	1.67	NS
Personal care function	1.98	1.99	NS	1.99	1.95	NS
	Percentage	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
Public financial assistance	25.1	24.2	NS	30.2	20.2	10.0*

Transitional youth are persons who are 25 years old or younger.

* Indicates a significant difference ($p<.05$) from entry to VR to closure from VR.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Summary

Overall, nearly two-thirds (63 percent) of youth VR consumers achieved an employment outcome as a result of VR services, with the rate for youth who had received special education services in high school slightly higher than that for the other group (64 versus 59 percent). Of those who achieved employment, nearly all of the nonspecial education youth entered competitive employment (99 percent), compared with 81 percent of special education students. Special education youth VR consumers earned less per hour ($5.57 versus $6.47) and worked fewer hours (33.6 versus 37.1) than did other youth, who more often obtained jobs in the professional/managerial/technical fields (21 versus 6 percent).

Multiple regression analyses found that receipt of specific VR services was strongly associated with achieving an employment outcome, and to entering competitive employment, for both special education recipients and nonrecipients. Receipt of public financial assistance was negatively related to achievement of an employment outcome for nonrecipients of special education and to entering competitive employment for both groups. Various demographic, functional, and psychosocial factors were also associated with employment outcomes. The regression models for both employment and competitive employment outcomes among nonspecial education youth VR consumers and for competitive employment for special education students achieved a level of prediction that is very strong, accounting for between 20 and 27 percent of the variance in outcomes. This level of prediction is unusual in social science research.

Across all four groups (special education/nonspecial education, employment outcome/ competitive employment outcome), satisfaction with VR choices in terms of services and providers, rating of the quality of services, and satisfaction with the vocational goal and VR services overall were generally consistently high, ranging from 73 to 84 percent of all youth VR consumers. Predictably, youth who achieved an employment outcome tended to rate their VR experience more highly on all dimensions than did those who failed to achieve such an outcome.

Finally, youth who received special education services in high school made gains in employment from acceptance to closure but not in reduction of public financial assistance. Youth who received VR services but did not achieve employment did experience a reduction in such assistance between entry to and exit from VR.

Appendix A: Characteristics of Youth VR Consumers by Disability Type

Table A-1. Demographic Characteristics of Transitional Youth VR Consumers, by Disability Type

Characteristic	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
Gender					
Male	56.7	59.3	66.4	52.6	58.6
Female	43.3	40.7	33.6	47.4	41.4
Total	100.0	100.0	100.0	100.0	100.0
Age	23.0 (23.0)	23.1 (23.0)	22.8 (23.0)	23.1 (23.0)	23.0 (23.0)
Range	19-25	19-25	19-25	20-25	19-25
Race/ethnicity					
White	8.8	64.2	82.6	89.3	81.9
African-American	14.9	33.2	15.3	10.0	16.7
Alaska Native or American Indian	0.0	1.0	0.2	0.2	0.3
Asian or Pacific Islander	0.4	1.6	2.0	0.4	1.1
Total	100.0	100.0	100.0	100.0	100.0
Of Hispanic origin	9.8	8.5	10.7	12.0	10.6

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table A-2. Disability Characteristics of Transitional Youth VR Consumers, by Disability Type

Characteristic	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
Significance of disability	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
Significant/most significant	87.5	87.4	68.3	82.8	80.1
Nonsignificant	12.5	12.6	31.7	17.2	19.9
Total	100.0	100.0	100.0	100.0	100.0
Onset of disability	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
Congenital	39.4	92.9	75.8	46.2	62.9
Acquired	60.6	7.1	24.2	53.8	37.1
Total	100.0	100.0	100.0	100.0	100.0
Functional limitations	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
Gross motor function	1.98	1.94	1.98	1.87	1.93
Cognitive function	1.89	1.57	1.86	1.88	1.83
Personal care function	2.00	1.98	2.00	1.97	1.98

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table A-3. Educational Characteristics of Transitional Youth at Entry to VR, by Disability Type

Characteristic	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
	Percentage	Percentage	Percentage	Percentage	Percentage
Still in school	45.8	73.2	71.9	55.4	62.2
Received special education services in high school	41.9	97.8	83.8	31.1	62.3
	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)
Years of education completed	10.8 (11.0)	10.5 (11.0)	11.1 (11.0)	11.4 (12.0)	11.1 (11.0)
	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)
Reading achievement level	7.3 (8.0)	3.5 (3.0)	6.3 (5.7)	8.5 (9.0)	6.3 (5.7)
	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)
Mathematics achievement level	7.3 (6.6)	3.7 (3.5)	6.3 (6.0)	7.6 (8.0)	6.1 (5.6)

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table A-4. Attitudinal Characteristics of Transitional Youth VR Consumers, by Disability Type

Characteristic	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
	Mean	Mean	Mean	Mean	Mean
Self-esteem	2.54	2.47	2.57	2.66	2.59
Locus of control:					
Chance	1.69	1.92	1.81	1.63	1.73
Powerful others	1.66	1.90	1.69	1.55	1.65
Internality	2.48	2.45	2.50	2.51	2.50

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

The self-esteem scale and the three locus of control scales are composite measures derived from items on psychosocial functioning. Each scale ranges from 1 to 3. Items were coded so that a higher score indicates more of the given characteristic.

Sample items for each scale appear below.

Self-esteem:

I feel that I am a person of worth, at least equal with others.

All in all, I am inclined to feel that I am a failure.

Chance:

Measures the extent to which a person believes that chance affects his/her experiences and outcomes

Whether or not I get into a car accident is mostly a matter of luck.

It's chiefly a matter of fate whether or not I have a few friends or many friends.

Powerful others:

Measures the extent to which a person believes that other people affect his/her experiences and outcomes

If important people were to decide they didn't like me, I probably wouldn't make many friends.

Although I might have good ability, getting ahead depends on who you know, not what you know.

Internality:

Measures the extent to which a person believes that they have control over their own live

How many friends I have depends on how nice a person I am.

Whether or not I get into a car accident depends mostly on how good a driver I am.

Table A-5. Work History of Transitional Youth VR Consumers, by Disability Type

Work History	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
	Percentage	Percentage	Percentage	Percentage	Percentage
Never worked	15.1	34.0	16.3	18.9	20.8
Worked, not in 2 years prior to application	12.8	23.0	18.8	17.4	18.3
Worked in 2 years prior to application, not working at application	41.5	22.3	34.9	29.0	31.1
Working at application	30.6	20.6	30.0	34.8	29.8
Total	100.0	100.0	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table A-6. Employment Characteristics of Transitional Youth with an Employment Outcome, by Disability Type

Characteristic	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
Job type	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
Competitive labor	92.0	66.5	97.2	91.2	86.1
Sheltered work	0.0	12.5	0.0	2.0	4.1
Self-employment	1.7	0.0	0.0	0.7	0.4
Supported employment	3.0	17.2	2.3	5.5	7.5
Homemaker	0.0	2.6	0.0	0.6	0.9
Other	3.3	1.3	0.5	0.0	0.9
Total	100.0	100.0	100.0	100.0	100.0
Hours worked and hourly wages (competitively employed only)	**Mean (median)**	**Mean (median)**	**Mean (median)**	**Mean (median)**	**Mean (median)**
Hours worked per week	33.7 (40.0)	29.4 (30.0)	36.8 (40.0)	35.2 (40.0)	34.3 (40.0)
Hourly wages	$6.60 ($6.00)	$4.93 ($5.00)	$5.96 ($5.50)	$6.09 ($5.25)	$5.84 ($5.20)
Type of Occupation	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
Professional/managerial/technical	13.2	1.8	16.0	12.9	11.5
Clerical/sales	30.3	24.4	17.0	23.4	22.4
Services	36.0	44.7	25.0	28.1	31.9
Agriculture/fishing/forestry	0.9	1.8	4.3	2.3	2.7
Processing	0.0	6.8	3.0	2.8	3.4
Machine trades	5.3	3.5	8.3	4.9	5.8
Benchwork	1.0	5.0	13.4	15.4	10.3
Structural work	9.7	7.1	8.2	6.2	7.6
Miscellaneous	3.8	5.0	4.9	4.1	4.6
Total	100.0	100.0	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Table A-7. Satisfaction with VR of Transitional Youth, by Disability Type

Question	DISABILITY TYPE				
	Mental Illness	Mental Retardation	Learning Disability	Other Disability	Total
How did you feel about the job or goal you were working toward?					
Very/somewhat satisfied	88.7	74.0	77.0	79.8	78.2
Indifferent	7.2	10.7	6.5	9.1	8.4
Very/somewhat dissatisfied	4.1	15.3	16.5	9.9	13.4
Total	100.0	100.0	100.0	100.0	100.0
How did you feel about the choice of services made available to you?					
Very/mostly satisfied	78.2	82.8	60.5	78.8	73.5
Indifferent	12.8	9.3	15.3	9.9	12.0
Very/mostly dissatisfied	9.0	8.0	24.3	11.3	14.5
Total	100.0	100.0	100.0	100.0	100.0
Were you satisfied with the available choice of providers?					
Very/mostly satisfied	83.6	78.1	67.8	85.6	76.7
Indifferent	2.5	11.3	14.9	6.0	10.3
Very/mostly dissatisfied	13.9	10.6	17.3	8.4	13.0
Total	100.0	100.0	100.0	100.0	100.0
How would you rate the quality of services you received from the VR agency?					
Excellent	25.4	30.9	30.4	43.5	33.1
Good	54.7	48.2	36.3	32.2	41.2
Fair	11.3	18.1	23.5	17.1	18.8
Poor	8.6	2.7	9.8	7.3	7.0
Total	100.0	100.0	100.0	100.0	100.0
Overall, how satisfied were you with the services you received from VR?					
Very/mostly satisfied	68.4	90.4	67.9	81.7	77.8
Indifferent	17.3	6.4	10.8	7.0	9.5
Very/mostly dissatisfied	14.3	3.2	21.3	11.3	12.7
Total	100.0	100.0	100.0	100.0	100.0

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

Appendix B: Creation of Functional Limitation Scales

Creation of Functional Limitation Scales

Participants in the VR Longitudinal Study respond to a series of questions about their ADL and IADL functioning at entry to the study and also at closure from VR. We chose to develop scales of functional limitations in order to summarize the data from these questions. **Table B-1** presents the items used for scale development. To discover underlying traits that influence respondents' answers to ADL and IADL questions, we conducted an exploratory factor analysis. Factor analysis is a set of mathematical procedures that provide information about the number of factors that account for the pattern of correlations in responses. This analysis revealed three underlying dimensions, as shown in **Table B-2**.[1] The first dimension corresponds to gross motor function, the second contains items related to personal care function, and the third set of items involves cognitive function. These factors are correlated with each other, **Table B-3** presents these correlations. As we would expect, cognitive function is only moderately related to gross motor function and to personal care function (.329 and .337 respectively; personal care function is more strongly related to gross motor function (.571).

To confirm that these three scales have acceptable levels of reliability, we calculated Cronbach's alpha for each of them. Cronbach's alpha provides information about the internal consistency of the instrument. We present these results in **Table B-4**. Although the reliability coefficient is highest for the cognitive function (.804), all three are within acceptable limits.

Finally, to ensure that these scales do measure the constructs we believe they measure, we compared them across disability types. We hypothesized that individuals with orthopedic or non-orthopedic physical disabilities would score lower on gross motor function than other individuals with disabilities and that individuals with mental retardation would score lowest on the cognitive function. **Table B-5** contains these results.

[1] We specified an oblique promax rotation for this analysis; we determined the number of factors based on the number of eigenvalues greater than one.

Table B-1. Functional status items

Item	Percent unable to perform activity by themselves
Are you able to do this by yourself? The activity is	
Walking for a quarter of a mile - about three city blocks	18.9
Walking up a flight of stairs without resting	17.3
Doing heavy housework (such as scrubbing floors, or washing windows)	32.1
Lifting and carrying something as heavy as 10 pounds (such as a full bag of groceries)	17.6
Getting around outside the house	7.7
Reading and understanding the newspaper	15.2
Writing	11.3
Managing your money (such as keeping track of expenses or paying bills)	17.3
Shopping for personal items (such as toilet items or medicines)	13.7
Driving	25.0
Using public transportation	12.5
Using the toilet, including getting to the toilet	2.7
Dressing	3.4
Bathing or showering	4.7
Getting into and out of bed	3.2
Eating	1.0

Source: VR Longitudinal Study, March 1999

Table B-2. Factor analysis of functional limitation questions*

Item	Gross Motor Function	Cognitive Function	Personal Care Function
Are you able to do this by yourself? The activity is			
Walking for a quarter of a mile - about three city blocks	0.764	-	-
Walking up a flight of stairs without resting	0.701	-	-
Doing heavy housework (such as scrubbing floors, or washing windows)	0.613	-	-
Lifting and carrying something as heavy as 10 pounds (such as a full bag of groceries)	0.550	-	-
Getting around outside the house	0.531	-	-
Reading and understanding the newspaper	-	0.733	-
Writing	-	0.629	-
Managing your money (such as keeping track of expenses or paying bills)	-	0.628	-
Shopping for personal items (such as toilet items or medicines)	-	0.609	-
Driving	-	0.600	-
Using public transportation	-	0.534	-
Using the toilet, including getting to the toilet	-	-	0.721
Dressing	-	-	0.662
Bathing or showering	-	-	0.645
Getting into and out of bed	-	-	0.639
Eating	-	-	0.494

Source: VR Longitudinal Study, March 1999
*Loadings less than .450 are omitted from this table.

Table B-3. Interfactor Correlations

	Gross Motor Function	Personal Care Function	Cognitive Function
Gross Motor Function	1.0	.571	.337
Personal Care Function	.571	1.0	.329
Cognitive Function	.337	.329	1.0

Source: VR Longitudinal Study, March 1999

Table B-4. Reliability coefficients

Scale	Cronbach's alpha
Gross Motor Function	.798
Personal Care Function	.795
Cognitive Function	.804

Source: VR Longitudinal Study, March 1999

Table B-5. Functional status scales: disability type

Disability Type	Gross Motor Function	Cognitive Function	Personal Care Function
Vision impairment	1.70†	1.42†	1.96
Hearing impairment	1.92*	1.92*	1.99*
Orthopedic, including amputation	1.64†	1.89*	1.93†
Nonorthopedic physical	1.80	1.91*	1.99*
Mental illness	1.91*	1.90*	1.99*
Mental retardation	1.92*	1.56†	1.98
Substance abuse	1.93*	1.94*	2.00*
Learning disability	1.96*	1.85	2.00*
Traumatic brain injury	1.84	1.81	1.94
All other conditions	1.92*	1.82	1.98
All disabled persons	1.81	1.84	1.97

Source: VR Longitudinal Study, March 1999

* Individuals with this type of disability function significantly better on this dimension than individuals with all other disabilities.

† Individuals with this type of disability function significantly worse on this dimension than individuals with all other disabilities.

Appendix C: Education and Training Services

Table C-1. Education and Training Services Received by Transitional Youth

Type of service	Percentage of transitional youth
Four-year college/university program	14.3
Two-year/community college	12.4
Work adjustment training	10.3
Business/vocational training	9.1
Supported employment	6.2
On-the-job training/job trial	2.8
Elementary/secondary education	1.9
Tutoring	1.2
Transitional employment	1.1
GED preparation	0.8
Work hardening	0.5
Instruction in lip reading	0.2
Instruction in reading Braille	0.0
Instruction in English as a second language	0.0
Literacy instruction	0.0

Transitional youth are persons who are 25 years old or younger.

Source: VR Longitudinal Study, November 1999

Preliminary findings: data collection is ongoing

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