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***The Current Status of Postsecondary Education Services, Individuals with
Disabilities, and the Vocational Rehabilitation System***

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The Current Status of Postsecondary Education Services, Individuals with Disabilities, and the Vocational Rehabilitation System

A. Introduction

A postsecondary education is one of the most significant ways in which an individual can increase their employability (NCES, 1999; U.S. Department of Labor, 1999; Roy, Dimigen, & Taylor, 1998; GAO, 1997). Educational attainment closely relates to lifetime earnings and economic self-sufficiency, two of the hallmarks of successful employment (Disability Rights Advocates, 1997; HEATH, 1996). Seventy-eight percent of high school graduates enter into some type of postsecondary education compared to 37% for individuals with disabilities (Blackorby & Wagner, 1996). For people with disabilities, these educational options — including full or part-time college, adult education, continuing education, and technical and/or vocational training — are critical. Unfortunately, when looking at admission to a 4-year college, students with disabilities are much less likely to be even minimally qualified to attend (NCES, 1999; Phelps & Hanley-Maxwell, 1997).

Access to postsecondary education and training is a major factor in the transition from high school to successful adult life. Research has shown that participation in and completion of postsecondary college and vocational programs enhances the development of self-esteem and the likelihood of obtaining employment for individuals both with and without disabilities (Fairweather & Shaver, 1991). There is also evidence that participation in postsecondary educational training is more strongly related to long-term employability than is completion of secondary vocational programs (Rumberger and Daymont, 1984). While some research has found that the difference in participation in postsecondary vocational programs between youth with disabilities and without is minimal, there is a vast difference between participation rates in college programs. Youth with disabilities are approximately 3 times less likely to take some community college courses, and as much as 10 times less likely to take some 4-year college courses than their non-disabled peers. According to Fairweather & Shaver (1991), the fact that a student with a disability graduates from high school does not increase the likelihood of attending postsecondary programs. In general, however, the factors related to participation in postsecondary education for youth with disabilities are the same as for non-disabled individuals. Individuals with and without disabilities who do participate in postsecondary programs have similar demographic characteristics such as parental education, income, and high school graduation status (Fairweather & Shaver, 1991). Therefore, the primary difference between individuals with and without disabilities is the issue of access. Why are individuals with disabilities limited in their access to postsecondary education and what can be done to increase their participation?

The labor force participation for individuals with disabilities illustrates an alarming employment problem. Only 30% of individuals age 16-64 who seek employment are employed compared to a rate of 70% for individuals without disabilities (Harris, 1998; Sitlington, Frank, & Carson, 1992). For students who are able to persist to degree attainment (31% for students with disabilities as compared to 51% for students without disabilities) most work full-time and have comparable salaries regardless of disability (NCES, 1999). Therefore, it is critical to understand barriers that inhibit and services that assist individuals with disabilities in gaining access to and completing a postsecondary education and, ultimately, in securing employment. In an effort to contribute to a

better understanding of these issues, this article will provide a secondary data analysis of elements of the national Rehabilitation Services Administration (RSA) database related to services and supports that vocational rehabilitation (VR) agencies nationwide provide to eligible individuals with disabilities with regard to postsecondary education.

The Rehabilitation Services Administration (RSA) exists within the U.S. Department of Education and maintains the legislative mandate to provide job placement and job training to all eligible persons with disabilities. This administrative office allocates resources to vocational rehabilitation (VR) offices in each state. The state/federal VR system is one of the largest federal efforts to address unemployment. This system closes approximately 600,000 cases annually, with over 208,000 successful rehabilitations in 1997 (RSA, 1999). In these state offices, a range of services and supports are delivered by rehabilitation professionals to individuals with disabilities who are interested in obtaining employment. These employment services can include, but are not limited to, assessment, counseling, guidance, job placement, post employment support, and postsecondary educational supports (Kiernan, Gilmore & Butterworth, 1997).

The Vocational Rehabilitation system can be of assistance to individuals who require postsecondary education in order to reach an employment goal. While VR may not provide full tuition costs for an individual to attend college, the system may still contribute money necessary to cover other expenses once additional sources of financial aid have been exhausted and there is still a need for support. VR funds may be used towards a student's tuition and textbooks, and in some cases, also for housing, food, and/or transportation. VR may also aid in paying for assistive devices for personal use, such as Braille and computer technology, and services such as personal readers and interpreters. The specific services that may be funded through VR differ from state to state, and may require the use of resources from other agencies before a commitment of VR funds is made (Spiers & Hammett, 1995).

The ADA requires that the postsecondary institution is responsible for providing and funding services needed for individuals with disabilities to participate in the college program, such as interpreters and accessible facilities. However, these institutions may be able to obtain money to pay for these services through funding from VR (Spiers & Hammett, 1995). The college is not required to provide aids or services for personal use or study, so this is where VR funds may be especially useful (Colley & Gingerich, 1996). Therefore, it is beneficial for students and postsecondary institutions to determine if the student is qualified to receive VR services so that the expense of some academic accommodations may be transferred to the VR agency. Many states have developed working agreements between the VR agencies and financial aid offices, which allows for a coordinated effort in providing funds for students with disabilities to attend postsecondary programs. These agreements establish a process that the VR agencies and postsecondary institutions will follow in order to determine the aid to be granted to the student (HEATH Resource Center, 1999).

B. Methodology

Data Source:

The Rehabilitation Services Administration uses the RSA-911 data reporting system to collect data on each individual case closed by state VR agencies. This system is one of the longest-standing national data collection efforts addressing employment of people with disabilities and

serves as the basis for examining the employment activities of the RSA (Kiernan et. al., 1997). Information on consumer demographics, the nature of services provided, and the outcomes realized are collected. The data is then used to determine the effectiveness of the agencies in assisting individuals with disabilities in entering or returning to work. This data not only allows for the analysis of trends in rehabilitation services for individuals with disabilities, but also identifies employment outcomes of individuals served within the public rehabilitation system.

Closures:

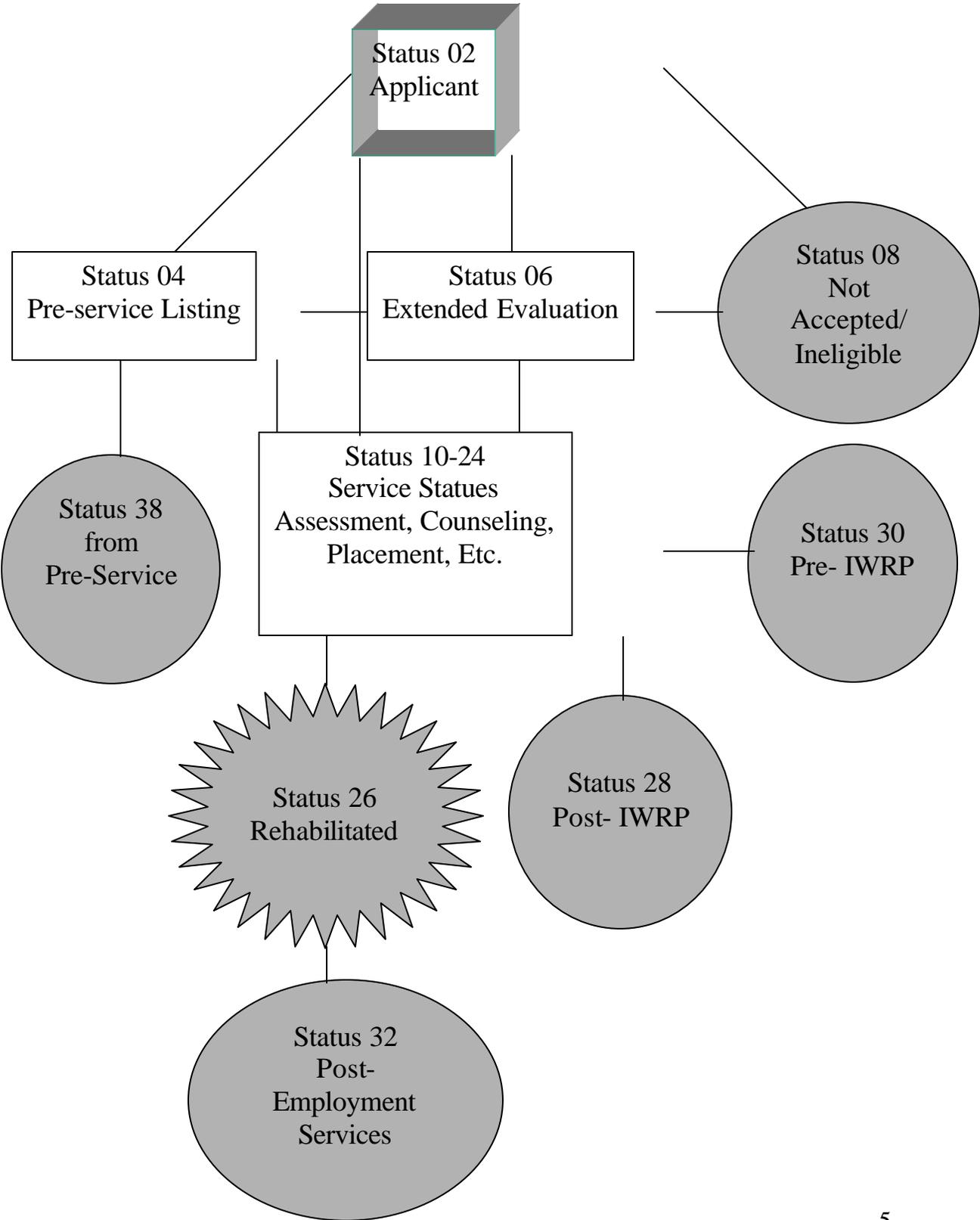
To better understand the analysis and results presented hereafter, a brief overview of how a person receives services through VR is shown in Figure 1. The process can be viewed in three steps: 1. Application, in which one's eligibility is determined. If the applicant is considered ineligible or if the person withdraws from application, the case is closed as not accepted for services (status 08). 2. Development of the Individualized Written Rehabilitation Plan (IWRP). If the person does not have an IWRP developed, the case is closed as not successful (status 30), or the person moves onto step three. 3. Implementation of the IWRP. Here the person either obtains a job and maintains employment for a minimum of 90 days and the case is closed as successful (status 26), or the person does not obtain or maintain employment and is closed as unsuccessful (status 28). An individual may not experience all VR services or statuses. Progress through the system is determined by that individual's needs.

Since the focus of this study will be on services that people received, only people with cases closed as rehabilitated (status 26) and not rehabilitated (Status 28 and status 30) will be counted in this study. It is important to note that those who were closed as Status 30, not rehabilitated before an IWRP (Individual Written Rehabilitation Plan) was developed, are included because the data show that postsecondary education services were provided to people closed into this status. Under the rehabilitation rate section there will be a more in-depth discussion of these closures. Table 1 shows a breakdown of the sample sizes for major items discussed in this study.

— **Table 1: Overall Sample Sizes** —

	Total	Male	Female
Total Sample	448,792	250,000	198,792
Received College only	44,398	22,477	21,921
Received Bus./Voc. only	37,402	19,806	17,596
Received Both Services	10,168	5,278	4,890
White	344,698	191,615	153,083
African Americans	93,319	52,318	41,001
Native Americans	4,296	2,372	1,924
Asian/Pacific Islander	6,468	3,689	2,779
Hispanic	34,648	20,484	14,164

Figure1: Status Flow in the Vocational Rehabilitation Process



Variables Reviewed:

To simplify the analysis and presentation of the data, four categories of postsecondary options were identified using two variables, College/university services and Business/vocational services (see Appendix A for definitions of these categories.) These two items are dichotomous yes/no, indicating whether or not a person received the service. These items are not mutually exclusive, i.e. a person could receive both services, therefore, and four categories were created. These categories are:

1. College/university educational services only;
2. Business/vocational educational services only;
3. Both education services (combinations of the above two); and
4. None. Did not receive either educational service.

The third category, 'Both', is listed to more accurately present the data. This allows an unduplicated count of people receiving any postsecondary services.

This variable then cross-tabulated with several individual descriptors, including:

- Age;
- Ethnicity (Race and Hispanic origin);
- State;
- Major disabling condition;
- Sex;
- Highest grade completed;
- Concurrent benefits;
- Type of closure (rehabilitation rate);
- Work status at closure;
- Earnings at closure;
- Hours worked at closure;
- Cost of purchased services;
- Days from application to closure;

**Note: Appendix A has a specific definition for each variable.*

Limitations of the study

The RSA-911 is a very useful data set for examining outcomes from the VR system. Unfortunately, it does not address all aspects of this study, and therefore has limitations that need to be identified and kept in mind when reviewing all aspects of this study. As with any secondary analysis, the study is limited by what data was collected by some other entity. Although the people who received postsecondary services are clearly defined, there is no way to determine who may have wanted such services but did not receive them. In an attempt to measure this, the previously mentioned statistic from Blackorby and Wagner (1996), that 78% of high school graduates enter into some type of postsecondary education compared to 37% for individuals with disabilities, will be used in the discussion as a comparison statistic to people receiving postsecondary education services from the VR system.

Another issue, related to identification, is the task of identifying individuals who may have already had or were currently enrolled in some form of postsecondary education, not related to their VR services. The database identifies highest grade completed. This item, along with the service variables, was used to estimate the number of people who may have had or were currently attending some form of postsecondary education. Based on an estimate formed by looking at people who report completing higher than grade 12 and are not receiving any postsecondary education services, approximately 14.5% of VR recipients come with some postsecondary education not related to VR services.

The final note relates to the effect of the large size of the database being used on the statistical testing. The RSA-911 is the universe of closures for a particular year and, as previously noted; we will be discussing well over 400,000 people. Chi-square statistics for cross tabulations are not used due to the extreme sensitivity of this statistic to sample size. When continuous data are examined, independent samples analysis of variance (ANOVA) will be used. These tests can also be biased by sample size. Tests with over 200,000 degrees of freedom were performed, as will be noted, and some information can still be taken from these tests.

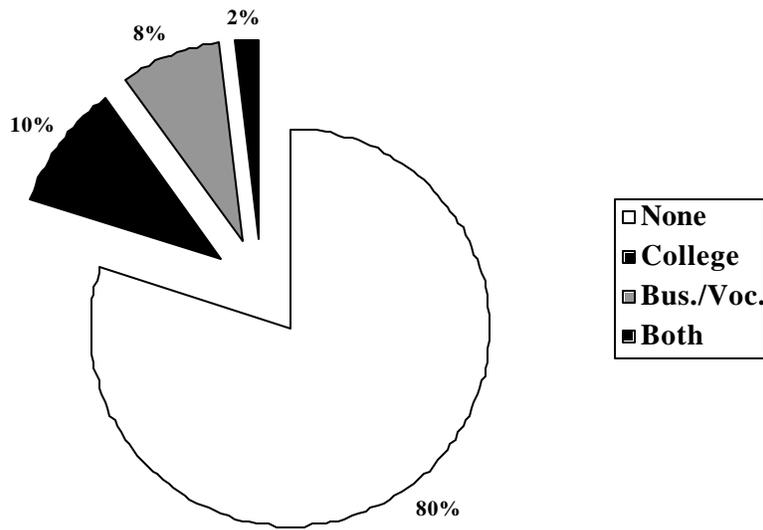
C. Findings

Consumer Profile

The total sample for this study of people whose cases were closed as either rehabilitated or not rehabilitated is 448,792. A total of 13 different services are listed in the database. For each service there is a yes/no response for each closure indicating if the service was received. Each person can receive any number of these services; they are not mutually exclusive. The most frequently reported services were assessment, 83% of closures received this service; counseling and guidance, 74% received this service; and, job-finding services, 32% received this service.

An unduplicated total of 21% received some form of postsecondary education services. When looking at all individuals who received some form of postsecondary education services, 12.2% received university/college services and 10.6% received business/vocational services. As noted in the Variables Reviewed section, a person could receive both services. To account for this, those who received both were put into a separate category. The unduplicated 21% comes from 9.9% who received only university/college services (no business/vocational services), 8.3% who received only business/vocational services (no university/college training), and 2.3% who received both types of postsecondary educational services (see Figure 1.1). All future statistics will be listed as unduplicated totals i.e., college only, vocational only, or both.

— Figure 1.1 — Postsecondary Educational Services



The gender composition of the population is 56% male and 44% female. Approximately 11% of the female recipients received “college only” services compared to 9% for males. When looking at vocational/business educational service, 9% of females received this service compared with 8% for males. Looking at recipients who received both types of services, 2.5% of females and 2.1% of males received both services (Figure 1.2).

—Figure 1.2 — Services by Gender

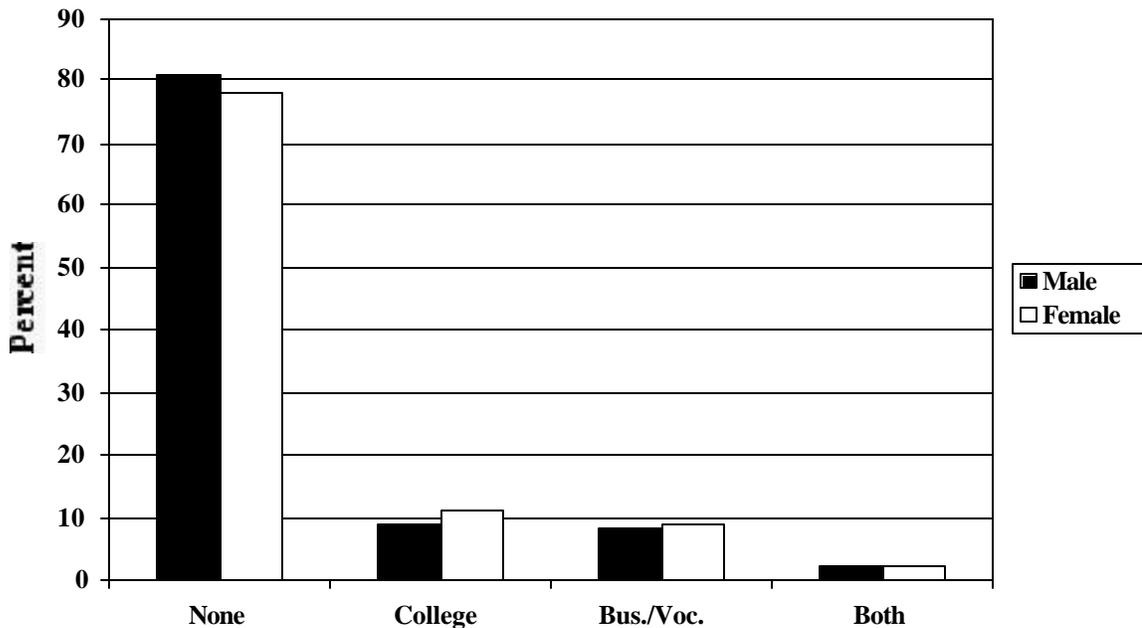
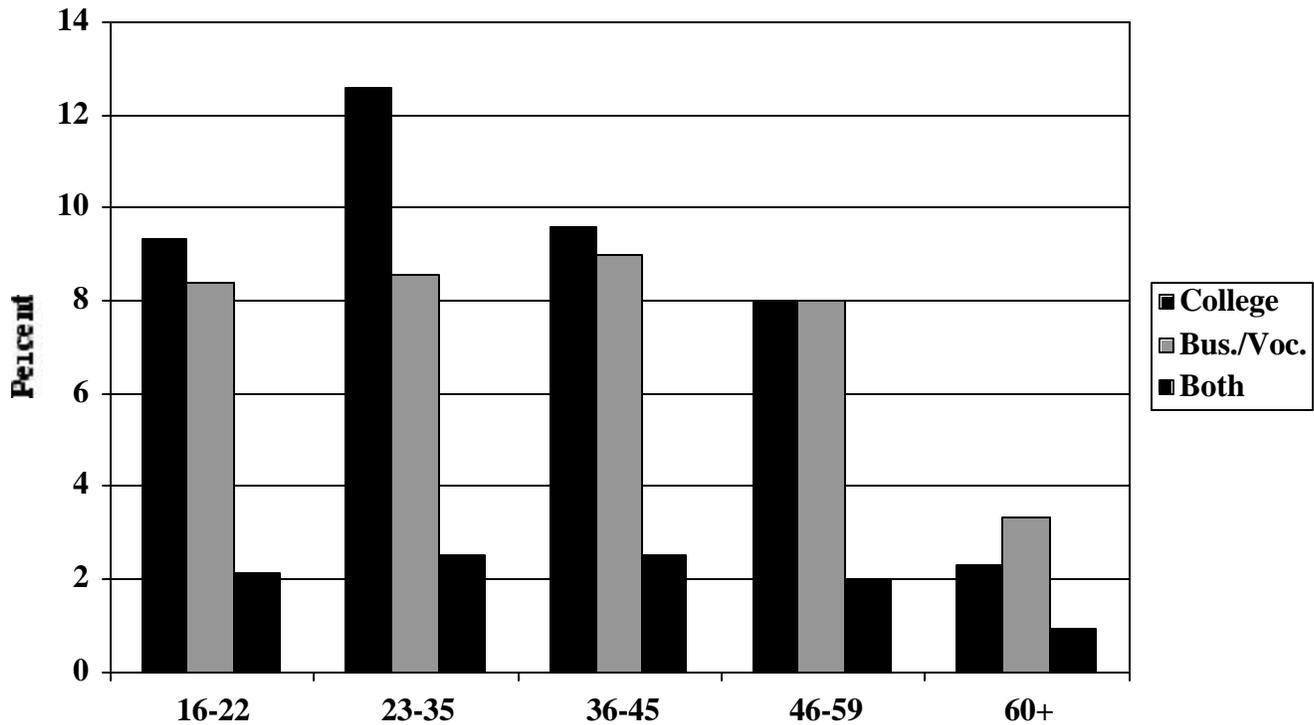


Figure 1.3 depicts the distribution of the ages of people receiving postsecondary education services. The most notable difference is that people, aged 23-35, had the highest prevalence of college services.

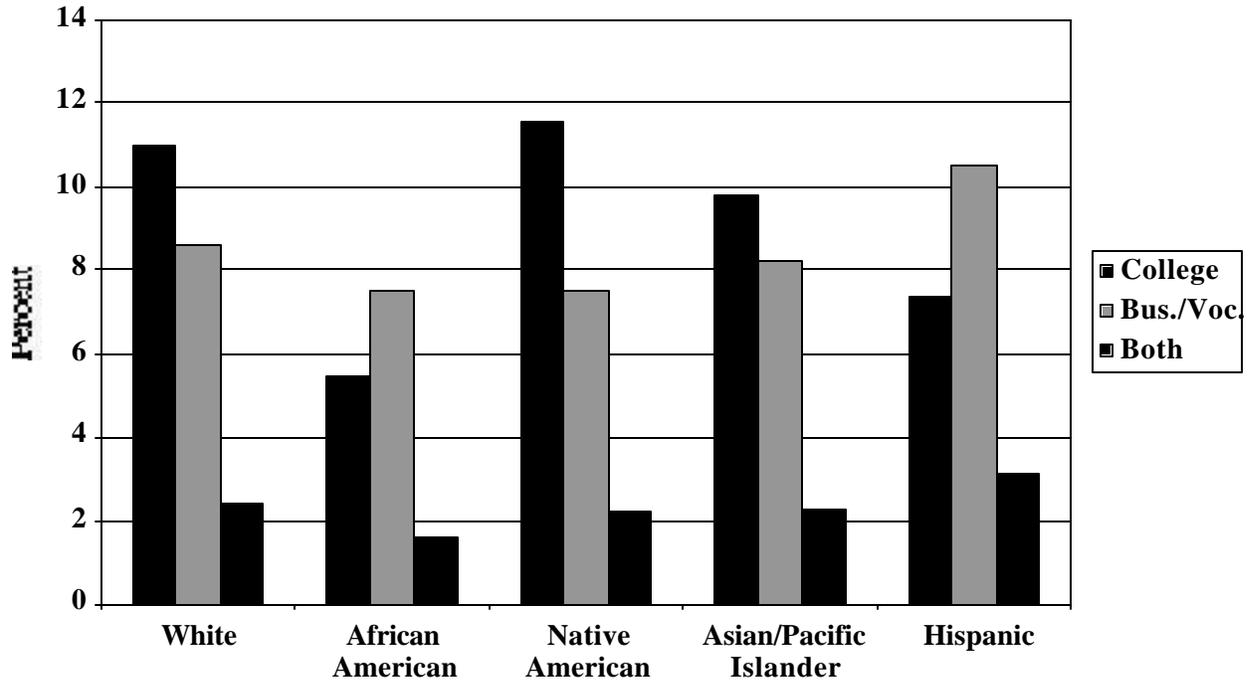
—Figure 1.3 — Services by Age



**Note: ‘None’ category has been omitted*

Of the individuals who received services that had identified racial information, there were 77% identified as White, 21% identified as African Americans, 1% identified as Asian/Pacific Islander, and 1% identified as American Indian/Alaskan Native. Included in this sample, 7.7% were identified as being of Hispanic origin, which was asked as a separate yes/no question. Figure 1.4 describes the distribution of postsecondary education services by ethnicity. Twenty two percent of individuals identified as White received some form of postsecondary education, 14.6% of individuals identified as African Americans, 21.3% of individuals identified as American Indian, and 20.4% of individuals identified as Asian/Pacific. Of individuals who identify themselves as being of Hispanic origin, 21.0% received some form of postsecondary education services. In terms of the types of services provided, “college only” was received as follows: 11.0% of individuals identified as Whites, 5.5% of individuals identified as African Americans, 11.6% of individuals identified as American Indians, and 9.8% of individuals identified as Asian/Pacific Islanders. Seven percent of individuals who identified themselves as Hispanic received “college only” services.

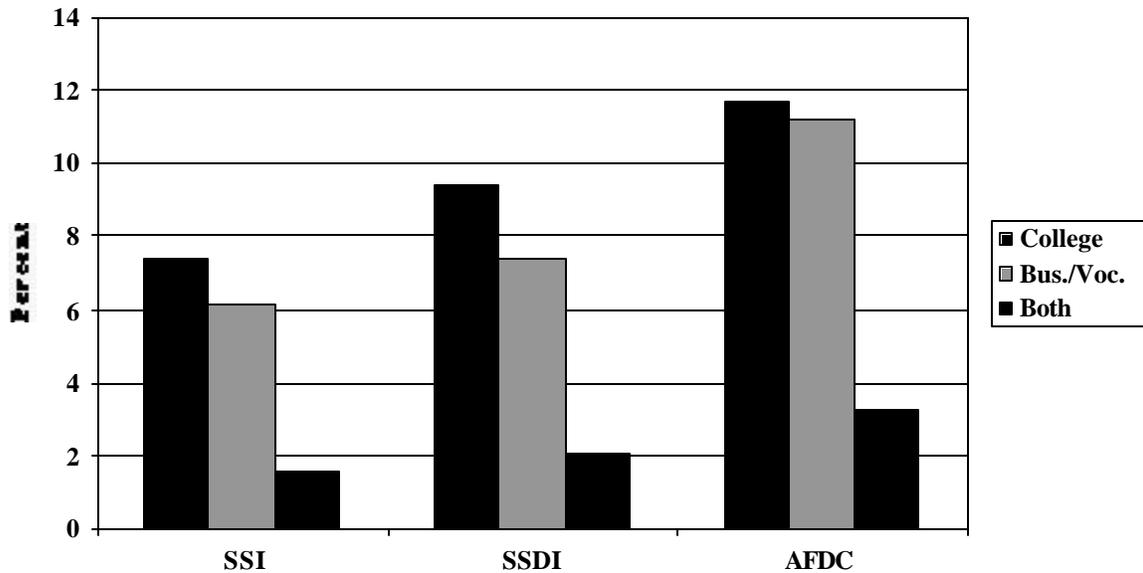
—Figure 1.4 —Services by Ethnicity



**Note: 'None' category has been omitted*

Figure 1.5 looks at the concurrent benefits individuals may receive from other agencies. Of individuals who reported receiving SSI, 15% received some form of postsecondary education services. Similarly, of persons receiving SSDI, 19% of individuals received postsecondary education services. For people receiving AFDC, 26% received postsecondary education services.

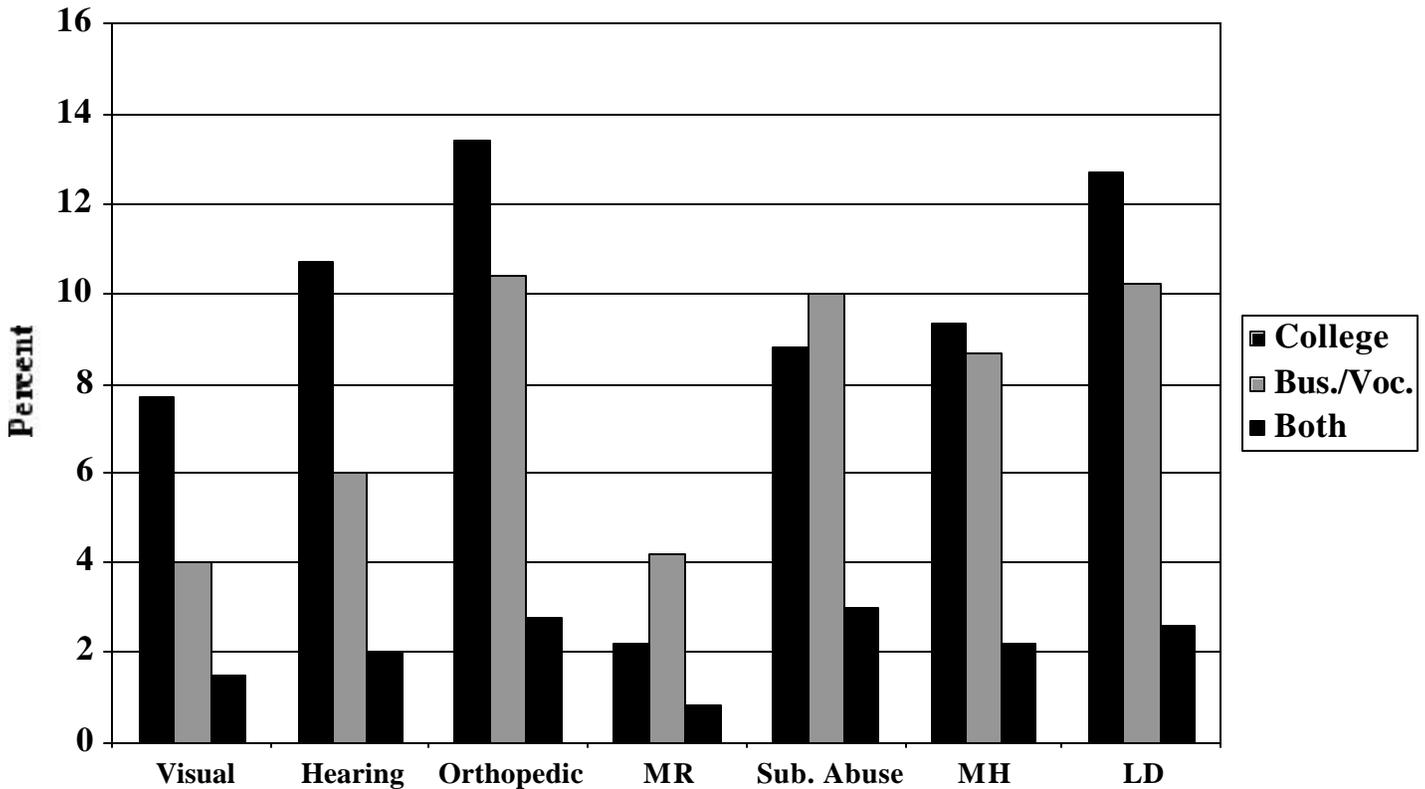
- Figure 1.5: Concurrent Benefits -



**Note: 'None' category has been omitted*

When relating postsecondary educational opportunities to specific disabilities, the most prevalent disability category – orthopedic – had the largest rate of postsecondary participation (26.6%). Individuals with mental retardation (MR) received postsecondary education services at the lowest rate (7.2%). Figure 1.6 displays the type of postsecondary option received by individuals in specific disability groupings.

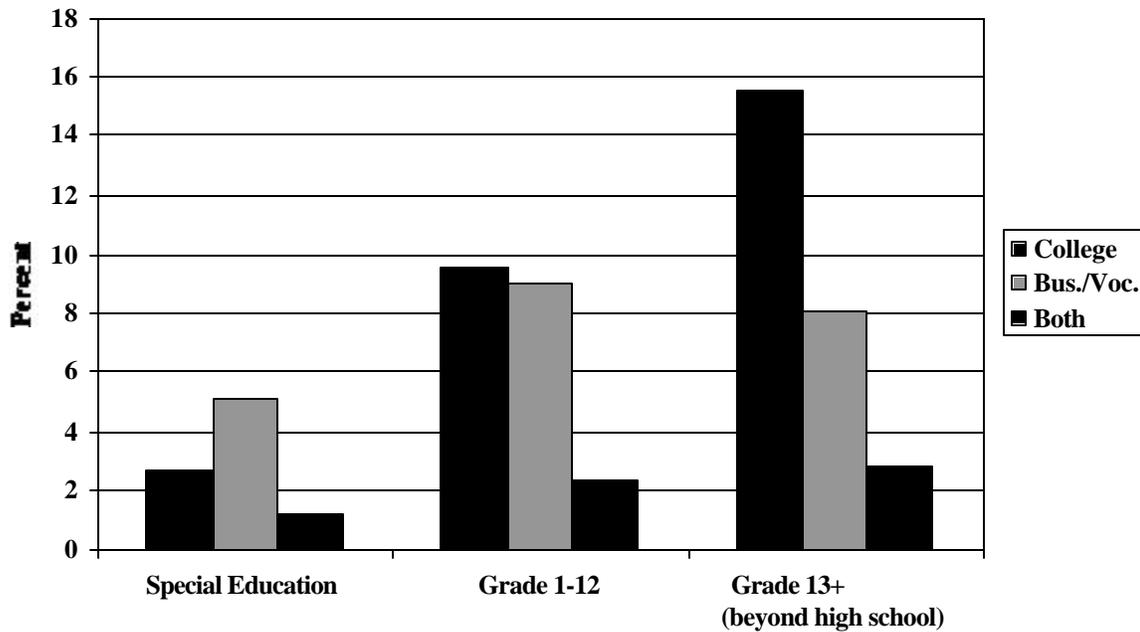
- Figure 1.6: Type of Postsecondary Option by Disability Groupings -



**Note: 'None' category has been omitted*

The VR data collected also includes an item indicating the highest grade, or grade equivalent, a person had completed at the time of application. Special education is included here and defined as instances where the person was not educated under a regular educational system (RSA Manual). Twelve percent of the recipients had received special education services prior to entering the VR system. The rate of postsecondary educational services for individuals who had been in special education was lower than the rate of services for individuals without special education. Only 8.9% of people who had special education services received any type of postsecondary education services, as opposed to 20.8% of people with high school or less and 26.5% of people with more than a high school education.

— Figure 1.7: Services Received by Highest grade completed —



**Note: 'None' category has been omitted*

Outcomes

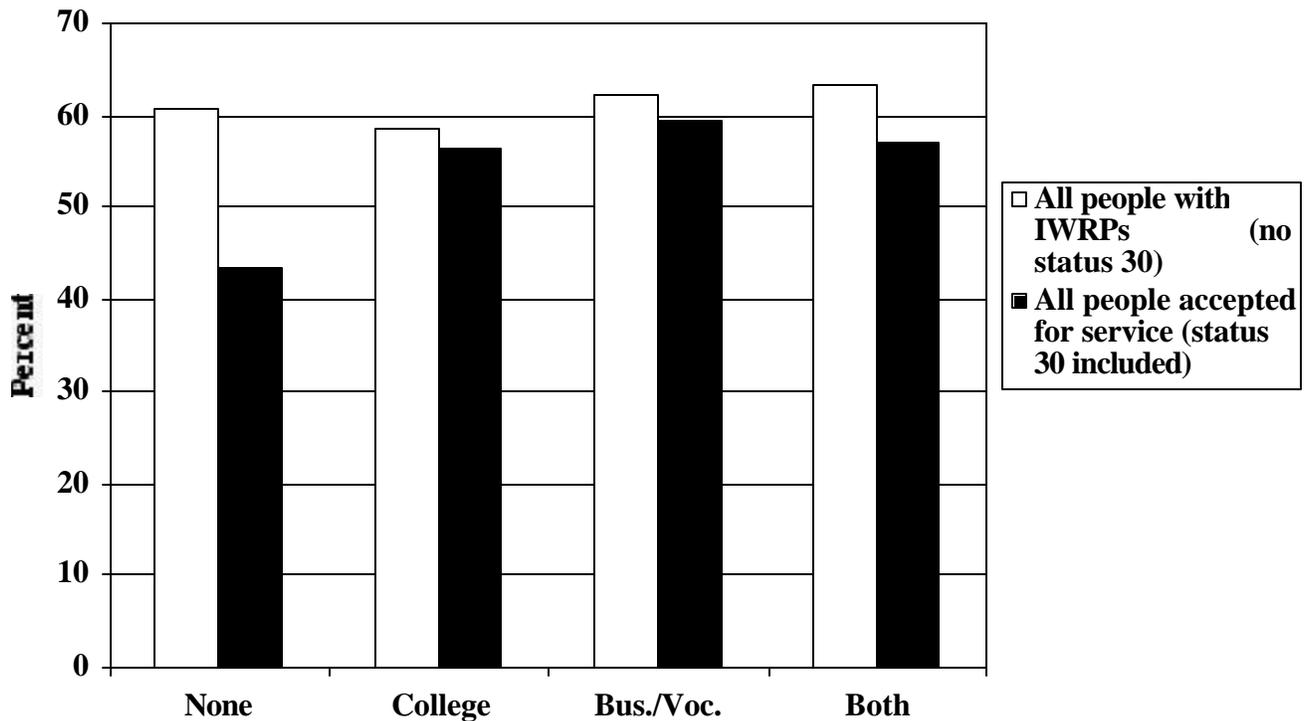
Rehabilitation Rates

To examine if receiving postsecondary education services has an impact on employment outcomes, a few different measures will be used. The simplest measure of successful VR services is rehabilitation rate. This measures the percent of people receiving services who had a successful closure, status 26 (see figure 1 and Appendix B: Status Definitions). RSA uses the ratio of people closed status 26 to all closures either status 26 or status 28 (omitting status 30). When this measure is applied, postsecondary services appear to have little effect. Individuals receiving no postsecondary education services had a rate of 60.8%, people with “college only” had a rate of 58.4%, those with “business/vocational only” had a rate of 62.3%, and those receiving both had a rate of 63.3%. However, when all people who were accepted for services are considered, i.e. status 30 included, the numbers look quite different. People receiving no postsecondary education services had a rehabilitation rate of 43.5%, people with “college only” had a rate of 56.5%, those with “business/vocational only” had a rate of 59.4%, and those receiving both had a rate of 57.0%. Figure 1.8 depicts the rehabilitation rates computed using both methods to give a simple comparison.

Which rate to consider is a difficult question. The method of using only those who had IWRPs developed (status 30 not included, figure 1.7) was introduced by RSA after the 1992 Amendments to the Rehabilitation Act were implemented and more people were accepted for service while significantly fewer were closed as not accepted for service. Many arguments can

be made in either direction. However, there are more important employment measures to be considered.

— **Figure 1.8: Rehabilitation Rates by Services Received** —



Work status at closure

After considering whether or not a person had a successful closure, an important question to consider is the nature of the employment placement. It should be noted that a successful closure does not necessarily imply competitive employment. There are six different categories of successful closures. These are: (a) Competitive labor market, (b) Extended employment, formerly Sheltered workshop, (c) Self employed, (d) Business enterprise program, (e) Homemaker, and (f) Unpaid family worker. The vast majority of all successful closures is in the first category of competitive labor market, 87.5% of all successful closures, and is the primary focus of VR services. Postsecondary educational services appear to have an impact on work status. Figure 1.9 shows the distribution of work status by educational services received. Note that groups (c) and (d), and groups (e) and (f) have been combined into single categories in this table. A difference of about 9% in the competitive employment rate can be noted for those who receive some form of postsecondary education services. The second and third categories also show fairly large differences. These differences are primarily attributed to type of disability and will be discussed later.

Earnings and Hours Worked

In keeping with generally accepted findings, participation in postsecondary education increases earnings (Disability Statistics Center, 1997, U.S. Department of Labor, 1999). Data on weekly earnings and hours worked, for competitive labor market closures, were examined. At closure, the mean earnings for individuals who received college services only were \$325/week; for individuals receiving both college and business/vocational services, the mean earnings were \$257/week; for those who received business/vocational services only, the mean earnings were \$256/week; and, for individuals receiving no postsecondary education services, the mean earnings were \$238/week. An independent samples ANOVA confirms that these differences were significant, $F(3,190,648) = 2175.70$, $MSE = 52,832,031.19$, $p < .00001$. In terms of yearly income, postsecondary services in the form of college generates an average yearly income of \$16,900, while individuals who received no postsecondary education services earned an average yearly income of \$12,376 at time of case closure.

The number of hours worked per week also varied according to the type of services received. For individuals receiving “college only” services, the mean hours worked per week at time of closure was 36 hours per week. The mean hours for those receiving “business/vocational services only,” was 34 hours per week, for those receiving both, 33 hours, and for those receiving no postsecondary education services, the mean hours worked per week at time of closure was 32 hours per week.

Work Status by Disability

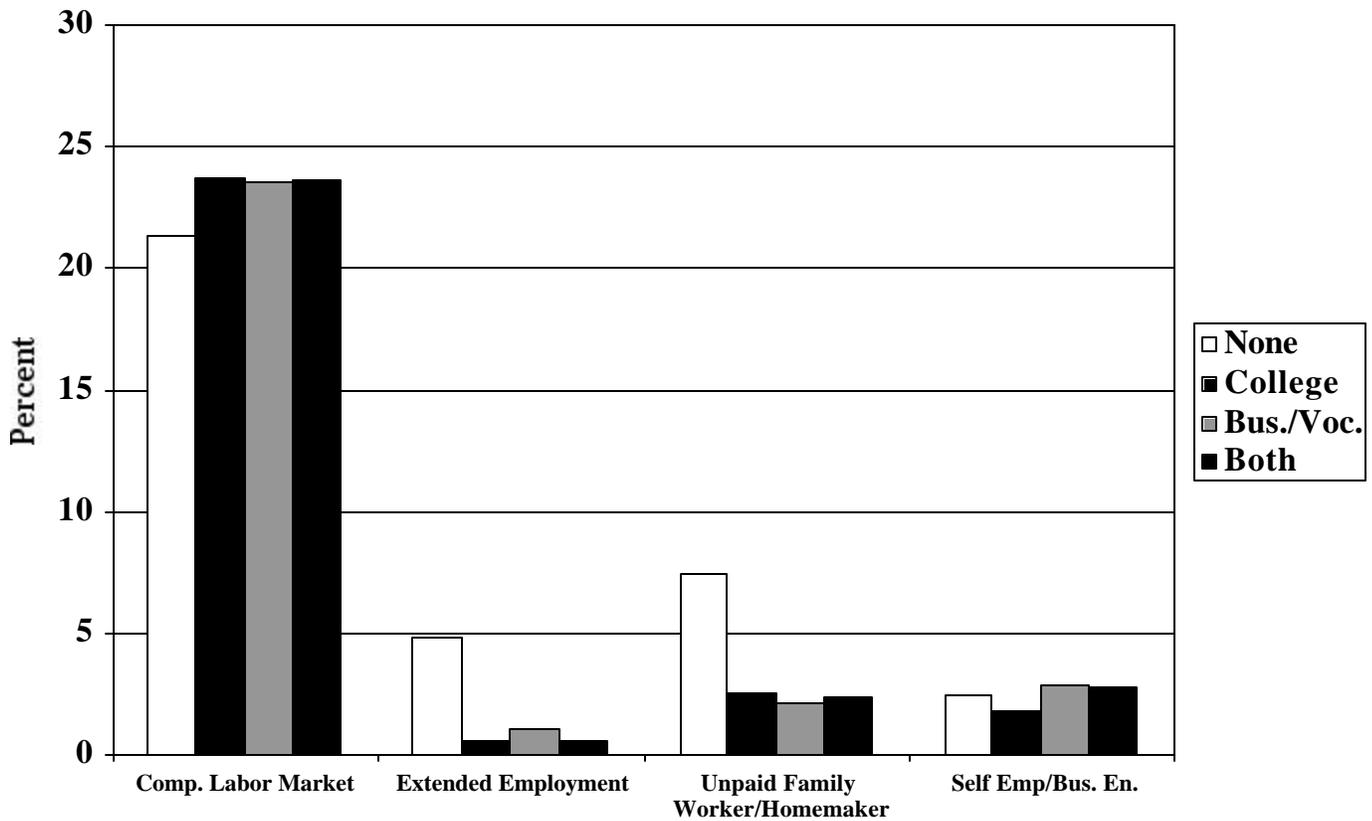
Figure 1.9 shows differences in work status by types of postsecondary educational services. As previously noted, the categories of extended employment (sheltered workshop) and unpaid family worker/homemaker show differences between educational groups. These differences are more apparent when different disability groups are more closely examined.

Extended employment is used primarily for individuals with mental retardation and related conditions. More than half of all the extended employment closures are for people with mental retardation, 4,001 of 7,991 extended employment closures. As noted earlier, people with mental retardation receive fewer postsecondary educational services, only 7.2%. For successful closures, there is a decrease in the use of extended employment for people who receive postsecondary education services from 15.2% for those receiving no postsecondary education services to 9.1% for those receiving college services, to 6.6 for those with business/vocational services, 4.9% for those receiving both. However, since the number who actually receive these services is so low, 2,380 of 27,635 successful closures, any comparisons are difficult to interpret.

In figure 1.9, the aggregate percent of people in unpaid family worker/homemaker closures is 6.2% of all successful closures. The percents for individuals with sensory impairments look quite different. For people with visual impairments, 45.9% of all successful closures are in this category, and for people who are deaf or hard of hearing it is 9.4%. The impact of postsecondary education services can be seen very clearly here. For people with visual impairments who receive college services, the unpaid family worker rate falls from 45.9% to 8.1%, with an increase in competitive labor market from 44.9% to 85.6%. Corresponding changes are also seen for the other education categories, lowering the unpaid family worker rate to 15.0% and 13.3% for business/vocational services and both services respectively. An increase in the competitive

labor market to 67.1% and 74.1% for business/vocational services and both services is also noted. For people with hearing impairments, college services lower the unpaid family worker rate to 2.1%, business/vocational services lower the rate to 2.7%, and both services lower it to 1.9%. The competitive labor market rate increases from 86.8% to 96.7% for people receiving college services, 94.9% for business/vocational services, and 95.8% for those receiving both.

—Figure 1.9: Work Status at Closure —



**Note: Competitive Labor Market percentages have been scaled. Actual percentages are not shown.*

Time in Service and Cost of Services

Days to closure information tracks the mean number of days from application to closure with rehabilitation. For the entire population, the mean number of days to closure is 663 days. For individuals receiving “college only” services, the number of days to closure is 1,365. For individuals receiving “business or vocational services only” it is 865 days to closure. For individuals receiving both types of educational services it is 1,127 days to closure.

Cost of purchased services show that individuals that receive postsecondary education services have a higher mean cost of services. Recipients who do not receive postsecondary education services cost \$1,788 at the time their case is closed. For individuals receiving only college services, the cost is \$5,538; for recipients receiving only business or vocational services, the cost is \$3,614; and, for those receiving both college and business/vocational services, the cost at time

of closure is \$4,586. An independent samples ANOVA confirms that these differences were significant, $F(3,448,785) = 8,446.16$, $MSE > 50,832,031.19$, $p < .00001$.

Geographic Variations:

Table 2 shows a breakdown by state of the percent of people receiving any type of VR postsecondary education services and those who received college VR services. Also included is the percent of the general population of each state enrolled in higher education at a college or university. The table has been sorted by the percent of people receiving college services from VR. The rankings are included to easily compare incidence of VR college services to that of general population enrollment in higher education. For example, note that Arkansas which ranks 3rd for people receiving college services from VR has the lowest general population enrollment in higher education.

— **Table 2: Postsecondary Services Received by State** —

State	% Receiving Any Postsecondary Educational Services	% Receiving College VR Services	Rank	% of General Population Enrolled in Postsecondary Education (1996) ^A	Rank
Oklahoma	42.0	33.9	1	5.4	19
Utah	47.7	30.0	2	7.6	1
Arkansas	41.1	28.6	3	4.0	50
Minnesota	33.7	23.5	4	5.9	13
Massachusetts	27.9	20.8	5	6.7	4
Kentucky	27.5	20.5	6	4.6	42
Wisconsin	36.1	19.5	7	5.8	15
Arizona	29.0	19.4	8	6.3	8
Louisiana	29.7	19.4	9	4.7	38
California	27.8	19.0	10	5.9	14
Wyoming	26.0	18.4	11	6.4	6
Washington	21.5	17.6	12	5.3	21
Idaho	28.6	16.9	13	5.0	31
Alaska	23.3	16.4	14	4.8	35
New Mexico	25.0	16.0	15	6.0	11
Hawaii	22.6	15.5	16	5.2	24
Iowa	30.7	15.3	17	5.2	23
Montana	24.4	14.8	19	4.9	33
South Dakota	22.8	13.5	18	4.8	36
West Virginia	22.9	13.2	20	4.7	39
Rhode Island	15.5	12.9	22	7.3	2
North Dakota	19.5	12.6	21	6.3	9
North Carolina	20.3	12.3	23	5.1	28
Michigan	23.7	11.9	24	5.7	16
Illinois	18.4	11.6	25	6.1	10
Missouri	17.8	11.4	26	5.4	20

Pennsylvania	20.1	11.3	27	5.2	25
Nevada	23.5	11.2	28	4.6	43
New Hampshire	16.0	11.2	29	5.5	18
Connecticut	16.8	11.0	30	4.7	40
Alabama	17.5	10.5	31	5.1	29
Indiana	17.5	10.4	34	4.9	34
Kansas	17.5	10.4	32	6.7	5
Nebraska	23.3	10.4	33	7.2	3
New York	18.6	9.9	35	5.7	17
Vermont	11.1	9.9	36	6.0	12
Texas	22.8	9.8	37	5.0	32
Florida	19.3	9.5	39	4.5	46
Maryland	10.3	8.9	40	5.1	30
Delaware	16.9	8.6	38	5.2	26
Ohio	15.5	8.3	41	4.8	37
Virginia	15.5	7.7	42	5.3	22
Maine	10.2	6.5	43	4.5	47
Colorado	12.0	6.0	44	6.4	7
Tennessee	8.6	5.2	45	4.6	44
Georgia	6.9	3.8	46	4.3	48
Mississippi	3.6	3.1	47	4.6	45
South Carolina	6.7	2.7	48	4.7	41
New Jersey	5.5	2.5	49	4.1	49
Oregon	1.5	1.0	50	5.2	27

A. Source: U.S. Department of Education, National Center for Education Statistics, *Higher Education General Information Survey (HEGIS), "Fall Enrollment in Colleges and Universities"*; and *Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment" surveys*, and U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Series P-25, No. 1095, CPH-L-74 (1990 data) and forthcoming state level P-25 reports.*

D. Discussion and Implications

Postsecondary education has been documented to have positive effects on employment outcomes. The Disability Statistics Center, (1997), and U.S. Department of Labor, (1999) both confirm that postsecondary education increases earnings for the general population. The research here also supports the finding that postsecondary education increases earnings and hours worked for individuals with disabilities in the Vocational Rehabilitation system. Improved work outcomes i.e., increases in competitive labor market closures for people, have also been noted.

One of the main goals of the Vocational Rehabilitation system is to provide opportunities for individuals with disabilities to participate in the mainstream of society through increased employment and independence (RSA 1997). Clearly postsecondary education is a vehicle that aids in reaching this goal. The VR system provides services that support postsecondary education for some individuals participating in education to reach their work goals. Blackorby and Wagner, (1996) state that 37% of individuals with disabilities enroll in some form of postsecondary education. The National Organization on Disabilities 1998 Harris Survey state that 50% of adults with disabilities have completed some college (including 2-year vocational

programs). The VR system paid for such services for 20.5% of all recipients by case closures in 1997. It was also estimated that 14.5% of these closures had some form of postsecondary education separate from the VR system. This can be viewed as about 35% of VR closures participating in postsecondary education in some manner, very close to the number cited by Blackorby and Wagner, (1996), albeit short of the N.O.D./Harris number. This number is far below the general population that has a postsecondary education participation rate of 72% (NCES, 1999).

While individuals, age 16-22, might be considered prime candidates for a postsecondary educational option, only 20% received this service. Within two years of high school graduation, 72% of students without disabilities enroll in some form of postsecondary education (NCES, 1999). The low rate of participation in postsecondary education among students with disabilities may be an unintended result of the Individuals with Disabilities Education Act (IDEA) which stipulates that students with disabilities are entitled to educational services from their local school district until the age of 21. As a result, the 22+ category on the VR data might be considered to parallel the general population. The highest level of participation in postsecondary educational services are those aged 23-35, however it is still only 24%.

Under the rehabilitation rate section, whether or not postsecondary educational services increase rehabilitation rates is a point of contention. If all individuals accepted for service are included (Statuses 26, 28, and 30), these services have a large positive impact on rehabilitation rates. This point is made to go in conjunction with the VR systems goal to be a more consumer-driven system as noted in the 1992 Rehabilitation Act amendments (RSA 1997). Perhaps if more consumers of VR services were aware that they could get such services, or these services were made more available, a larger percent of VR consumers would follow through with their services to successful outcomes.

Rehabilitation rates aside, the improvement in employment outcomes for people receiving postsecondary services are dramatic. For all successful closures, the increase in earnings is substantial: a yearly income of \$16,900 for those receiving college education, to \$13,364 for people receiving business/vocational services, while individuals who received no postsecondary educational services earned a yearly income of \$12,376. An income level of \$16,900 yearly exceeds the 1997 poverty threshold, for a family of four, of \$16,050. This is by no means exceptional income, however it is better than \$12,376 for those not receiving any postsecondary education services.

For people who traditionally have had poorer VR outcomes, e.g., people with mental retardation or people with visual impairments postsecondary education services also have a major impact. The increase in the rate of competitive labor market closures for people with visual impairments from 44.9% to a high of 85.6% is impressive indeed. For those who receive it, people with mental retardation are also benefiting from postsecondary education services. While it has been shown that there has been a decrease overtime in the use of sheltered workshops (extended employment) for people with mental retardation, more progress needs to be made (Gilmore, Schuster, Timmons & Butterworth, In Press). Even though the number of people with mental retardation receiving postsecondary education are limited, they have benefited from these services by lowering their rate of participation in sheltered workshops (extended employment

closures) from 15.2% to a low of 4.9%. A corresponding increase in the rate of competitive labor market closures is also noted, going up from 83.4% for those with no services to a high of 91.9 for those receiving both (88.4% for those receiving college only, and 90.8% for those receiving Business / Vocational services).

E. Conclusions

From the information presented, several needs emerge:

1. The need to increase the number of individuals with a wide range of disabilities (e.g., mental retardation, traumatic brain injury) who receive postsecondary education services from the VR system in order to increase their likelihood of adequate employment;
2. The need to increase the number of students with disabilities who remain under the auspices of their school districts, age 16-22, and who participate in postsecondary educational services to increase successful transition;
3. The need to increase the type of postsecondary education supports available for individuals with more severe disabilities in the VR system;
4. The need to increase supports available to individuals from a cross representation of disability, gender, and ethnicity;
5. The need to increase the carry over of supports from postsecondary education to employment;
6. The need to articulate services between high school to postsecondary educational options on into employment to optimize service dollars;
7. The need to examine access to postsecondary educational options for people with mental retardation; they have benefited from these services by lowering their rate of participation in sheltered workshops (extended employment closures) from 15.2% to a low of 4.9%; and,
8. The need to better understand the impact of educational pathways, such as special education, on employment outcomes.

F. Future Research

Opportunities for further research include:

1. Conduct longitudinal case studies that track individuals from a broad range of disabilities as they move from high school to college and into employment;
2. Examine how IDEA can be used to support access to postsecondary education options for students, age 18-21. For example, cost-sharing with VR and state systems serving individuals with disabilities;

3. Investigate the degree of transferability for supports and services from secondary to postsecondary education and employment;
 4. How can VR support a greater number of individuals with disabilities who access and complete a postsecondary education
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Appendix A: *Definitions of Variables*

1. **College/University Training** — Included is all academic training on a level higher than a secondary education. Clients attending full- or part-time, or evening courses conducted by a university, college, junior college, or a college-level extension school would be recorded as receiving this type of training. Academic training in an elementary or high school is recorded under miscellaneous training.
2. **Business & Vocational Training** — A non-collegiate postsecondary education option. Included is training in (a) a business/commercial school or college and (b) a vocational/trade school. Training in the business/commercial school or college would prepare the client for work in areas of office practice, typing, word processing, bookkeeping, accounting, data processing, etc. Training in the vocational/trade school would generally prepare the client for occupations such as welding, woodworking, TV repair, electrical wiring, auto mechanics, drafting, cosmetology, barbering, etc. (Any school offering a baccalaureate degree in business or related fields should be included under college/university).
3. **Assessment** — This complex of services is designed to enable the rehabilitation agency to determine the applicant's eligibility for vocational rehabilitation services, and/or to determine the nature and scope of services to be provided. Assessment involves diagnosis and evaluation and can be medical, psychological, social or vocational in scope.
4. **Counseling and Guidance-Substantial** — Record Code 1 only when Counseling and Guidance services are provided to the individual to a substantial degree. This means that Counseling and Guidance services were of overriding importance in the totality of rehabilitation services delivered to the individual, as determined by a large amount of time and effort expended to provide such services.
5. **Job-Finding Services** — A job-finding service is provided when enough information has been imparted to permit the individual to arrange for a job interview with a possible employer on his or her own. Such information, provided singly or in groups, would include instruction in how to read the want ads and other sources of employment opportunities, prepare job resumes, write cover letters, and prepare for job interviews. A job-finding service is also rendered when the State agency directly refers or arranges for the direct referral of the individual to a prospective employer.
6. **Age** — Age of client at application.
7. **Ethnicity** — Race of applicant; indication of Hispanic origin.
8. **State** — State in which VR services were received.
9. **Major disabling condition** — The physical or mental condition, impairment, or disease most responsible for the client's work limitation.

10. **Sex** — Gender of applicant.
11. **Highest grade completed** — Highest grade of school completed at the time of application for services for persons educated under a regular education system.
12. **Special education** — Indicated if a person was not educated under a regular education system.
13. **Concurrent Benefits** — Public support received at any time during the rehabilitation process.
14. **Type of closure (rehabilitation rate)** — Designates the point in the VR process at which the applicant's or client's case was closed out.
15. **Work status at closure** — Work activity performed by the individual at rehabilitation closure.
16. **Earnings at closure** — Amount of money earned in one week at the time of closure.
17. **Hours worked at closure** — Number of hours worked per week for which the client was paid at the time of closure.
18. **Cost of purchased services** — Total amount of money spent by the state VR agency in providing or arranging for services on behalf of the client from application to closure.
19. **Days from application to closure** — Number of days from application to closure.

Appendix B: *Definitions of Status Categories*

THE CASELOAD STATUS SYSTEM

Progress and decisions points in the vocational rehabilitation (VR) process have traditionally been referred to as statuses and represented as even numbered two-digit codes. The chief distinction in these statuses is between those representing cases that remain open vs. cases that have been closed. Both the open and closure statuses are composed of five components. The Case Service Report (RSA-911) calls for personal and program-related information only on the five closure statuses. The following list summarizes these closure statuses and, in addition, briefly describes the five components under the open statuses for reference purposes. The actual codes to use to designate the different types of closure in the RSA-911 system are found in the instructions for Record Position 121 (Type of Closure).

Open Statuses

Status 02 - Applicant: When an individual signs a document to request VR services, he or she is an applicant and the case is placed into Status 02. While an applicant, the individual's eligibility for VR services is determined within 60 days in most instances. If eligible, the applicant's case is moved either to (1) the Pre-Service Listing (Status 04) where services will be delayed because he or she does not meet an agency's order of selection priorities or (2) the Service Statuses (10 to 24) where no delay in the delivery of services is intended. If not eligible for VR services, the applicant's case will be closed to Status 08. If a determination of eligibility cannot readily be made, the applicant will be moved to extended evaluation (Status 06) and more information obtained in determining eligibility.

Status 04 - Pre-Service Listing: An applicant placed into this status has been determined eligible for VR services, but cannot receive them because he or she does not meet a State agency's order of selection priorities. Typically, the name of the individual will be placed on a waiting list for services until such time as the State agency has sufficient funds available to provide services. Placement of the person's name on the waiting list for services indicates that there will be a delay in the initiation of services which the individual is otherwise entitled to receive. A case leaving this status will either be (1) moved to the Service Statuses (10 to 24) to signify that services will be provided without further delay or (2) closed from Status 38 to indicate that services will not be provided for whatever reason.

Status 06 - Extended evaluation: An applicant is placed into this status when a rehabilitation counselor certifies the need to provide certain services to help in determining whether the individual can benefit from the full range of rehabilitation services in terms of an employment outcome. Applicants leaving this status, if eligible for VR, will be moved to the Pre-Service Listing (Status 04) or to the Service Statuses (10 to 24). If not eligible, the applicant's case will be closed to Status 08 within the 18-month period allowed for extended evaluation.

Statuses 10 to 24 - The Service Statuses: In the service statuses, the rehabilitation agency may conduct any or all of the following activities on behalf of the individual who has been determined eligible for VR services (the list is not intended to be all-inclusive, just illustrative).

-assess the rehabilitation needs of the individual and formulate the Individualized Written Rehabilitation Program (IWRP).

-provide counseling and guidance to prepare the client for employment.

-provide or arrange for any physical or mental restoration services (e.g., surgery, psychiatric treatment, rehabilitation technology services, etc.)

-provide or arrange for many different kinds of training such college/university, business, vocational, on-the-job, or personal and vocational adjustment training.

-provide or arrange for the delivery of job-seeking skills and placement into suitable employment.

A person remains in the service statuses in instances when services have been interrupted.

Status 32 - Post-employment services: This status is used to identify individuals who have previously been successfully rehabilitated, but who need additional rehabilitation services to help them maintain, regain or advance in their employment.

Closure Statuses

Status 08 - Closed not accepted/ineligible for VR: This status is used to identify persons determined ineligible or who are otherwise not accepted for VR services, whether closed from the applicant status (Status 02) or extended evaluation (Status 06).

Status 26 - Rehabilitated: Cases closed as rehabilitated must, as a minimum, (1) have been declared eligible for services, (2) have received appropriate assessment and related services, (3) have had a program for VR services formulated, (4) have completed the program, (5) have been provided counseling, and (6) have been determined to be suitably employed for a minimum of 60 days.

Status 28 - Closed other reasons after IWRP initiated: Cases closed into this category must have met criteria (1), (2) and (3) above, and at least one of the services provided for by the IWRP must have initiated, but, for some reason, one or more of criteria (4), (5) and (6) above were not met.

Status 30 - Closed other reasons before IWRP initiated: Cases placed into Status 30 are those which, although accepted for VR services, did not progress to the point that services were actually initiated under a rehabilitation program.

Status 38 - Closed from Pre-Service Listing: This status is used to identify individuals eligible for VR who will not advance to the Service Statuses (10 to 24) and whose names have been removed from the Pre-Service Listing (Status 04).

For example, status may be noted as follows:

5. Closed, not accepted for VR services, from the applicant status (Status 08 from Status 02)
6. Closed, not accepted for VR services, from extended evaluation (Status 08 from Status 06)
7. Closed rehabilitated (Status 26)
8. Closed, not rehabilitated, after individualized written rehabilitation program initiated (Status 28)
9. Closed, not rehabilitated, before individualized written rehabilitation program initiated (Status 30)
10. Closed from the pre-service listing (Status 38 from Status 04)