Postsecondary Education Services and Employment Outcomes within the Vocational Rehabilitation System

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Abstract: This article examines provision of postsecondary education services by the Vocational Rehabilitation (VR) system to eligible individuals with disabilities nationwide. The results of a secondary analysis of elements of the RSA-911 database from the Rehabilitation Services Administration in FY 1997 are discussed. The extent to which individuals within the VR system receive postsecondary education services is compared to the rate of individuals with and without disabilities participating in postsecondary education in the general population. An association between receipt of postsecondary services and VR outcomes is examined. Findings show that receiving postsecondary education services has little effect on the rate of successful closures in the VR system. Individuals receiving postsecondary education services from VR do show higher rates of competitive employment and improved employment outcomes including higher earnings and greater number of hours worked per week. Differences in receipt of postsecondary education services by disability type and the policy implications are discussed.

A postsecondary education is one of the most significant ways in which an individual can increase their employability (U.S. Department of Education, 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 some type of postsecondary education compared to 37% of individuals with disabilities (Blackorby & Wagner, 1996). In comparison to this study, The National Organization on Disabilities 1998 Harris Survey states that 50% of adults with disabilities have completed some college, including 2-year vocational programs (Harris, 1998). This number is higher than Blackorby and Wagner's 37% but still much lower than that of the general population. 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 considering admission to a 4-year college, students with disabilities are much less likely to be even minimally qualified to attend (U.S. Department of Education, 1999; Phelps & Hanley-Maxwell, 1997).

The labor force participation for individuals with disabilities illustrates an alarming employment problem. Only 30% of individuals age 16-64 with disabilities who seek employment are employed compared to a rate of 70% of individuals without disabilities (Harris, 1998; Sitlington,

Frank, & Carson, 1992). For students who persist to degree attainment (31% of students with disabilities compared to 51% of students without disabilities) most work full-time and have comparable salaries regardless of disability (U.S. Department of Education, 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.

The Vocational Rehabilitation (VR) system exists to provide assistance to individuals with disabilities seeking employment. In these state offices, a range of services and supports are delivered by rehabilitation professionals. 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). Individuals may use this system to obtain postsecondary education services in order to reach an employment goal.

While VR will not necessarily provide full tuition costs for an individual to attend college, the system may 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 in some cases, also for housing, food, and/or transportation. VR may also aid in paying for assistive devices for personal use, such as braillers 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. 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). The current text of the Rehabilitation Act Amendments of 1998 within the Workforce Investment Act states that an interagency agreement or other mechanism for interagency coordination must take effect between the vocational rehabilitation system and the appropriate public entity (including an institute of higher education) to ensure that specific VR services are provided. Such agreements do not necessarily shift the obligation of paying for vocational rehabilitation services to colleges and universities. Both parties must agree to the terms of the interagency agreements including their financial responsibilities and the services they are expected to provide (House of Representatives Conference Report 105-659, July 29,1998). Most 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).

The Rehabilitation Services Administration (RSA) within the U.S. Department of Education has the legislative mandate to provide job placement and job training to all eligible persons with disabilities. This administrative office allocates resources to vocational rehabilitation 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).

As an oversight function, RSA collects information from each VR agency in each state, including agencies for people who are blind, using the RSA-911 database. 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 support activities of RSA (Kiernan, 1997). This article will provide a secondary data analysis of elements of the RSA-911 database related to services and supports that vocational rehabilitation agencies nationwide provide to eligible individuals with disabilities with regard to postsecondary education. This analysis will examine several research questions.

* To what extent does VR provide postsecondary education services?
* How does the rate of individuals within the VR system receiving postsecondary services compare to the rate of individuals participating in postsecondary education in the general population?
* Is there an association between the receipt of postsecondary services and VR outcomes (such as rehabilitation rates and employment status) or employment outcomes (hours and earnings)?

Method

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. Information is collected on consumer demographics, the nature of services provided, and the outcomes realized. These data are then used to determine the effectiveness of the agencies in assisting individuals with disabilities in entering or returning to work. This collection effort not only allows for the analysis of trends in rehabilitation services for people with disabilities, but also addresses the employment outcomes supported by this public system. This article contains analysis of data from FY 1997.

Limitations of the Data

The RSA-911 is a very useful data set for examining outcomes from the VR system. Unfortunately it does not completely inform our research questions and therefore has limitations to be kept in mind when reviewing elements of this study. In particular this study depends on data collected by another entity. Interpretation of the data is limited specifically by how it was collected and how the creators of the data set defined their items. The specific item definitions are given in the Variables Reviewed section. Two key items that are not collected concern who may have wanted postsecondary education services but did not receive them and who did not want such services.

Another particular analysis issue for this data set is its large size. The RSA-911 is the universe of closures for a particular year well over 400,000 people in 1997. Chi-square statistics for cross tabulations were not used due to the extreme sensitivity of this statistic to sample size. Associations are discussed as positive only when clear trends across groups were noted for large

numbers of individuals. Analysis of variance is used to test differences in income levels across education groups. Because of the large sample size, statistical significance was expected, but the apparent magnitude of the differences is worth noting.

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. College/University Training is defined as 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. Business/Vocational Training is defined as 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 is included under college/university) (RSA, 1998). These categories are not mutually exclusive. A person could receive both services, hence four categories were created. These categories are: 1. College/University educational services only, 2. Business/Vocational educational services only, 3. Both of these education services, and 4. None, did not receive either educational service. This method allows an unduplicated count of people receiving any postsecondary services.

This variable is then cross-tabulated with several individual descriptors including: State, state in which VR services were received; Major disabling condition, the physical or mental condition, impairment, or disease most responsible for the client's work limitation; Highest grade completed, highest grade of school completed at the time of application for services for persons educated under a regular education system; Type of closure (rehabilitation rate), designates the point in the VR process at which the applicant's or client's case was closed out; Work status at closure, work activity performed by the individual at rehabilitation closure; Earnings at closure, amount of money earned in one week at the time of closure; Hours worked at closure, number of hours worked per week for which the client was paid at the time of closure.

Closures

To support a personal employment goal, the VR system can directly provide or can fund a wide variety of assessment, counseling, training and placement services. VR is not a long term service provider in that a person receives services to meet their employment goal. People move into and out of the VR system as they need services. To measure their success, VR uses a closure based system. A closure refers to a person who has completed their VR services for a variety of reasons. Closures can be separated into three general categories: 1. The person attained a rehabilitation goal (successful closure, rehabilitated). This goal does not have to be employment. Categories for work status at closure are: competitive labor market, extended employment

(formerly sheltered workshop), self-employed, business enterprise program, homemaker, and unpaid family worker. 2. Determination was made that the person would not become employed through VR services (unsuccessful closure, not rehabilitated). 3. The person was found not eligible for services (unsuccessful closure, not accepted for services).

To facilitate understanding of our analysis, here is a brief overview of how a person receives services through VR. Specific status numbers are given for readers familiar with the system. The process can be viewed in three steps: 1. Application, in which 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 Plan for Employment (IPE), formerly known as an Individualized Written Rehabilitation Plan (IWRP). If the person does not have an IPE developed, the case is closed as not successful (status 30). 3. Implementation of the IPE. 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). Progress through the system is determined by each individual's needs.

Since the focus of this study was on services that people received, only cases closed as rehabilitated (status 26) and not rehabilitated (status 28 and status 30) were counted in this study. It is important to note that those who were closed as Status 30, not rehabilitated before an IPE was developed, are included because our data show that postsecondary education services were provided to people in this status. Under the Rehabilitation Rate section there will be a more in-depth discussion of these closures.

Results

Consumer Profile

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

Twenty one percent of individuals (unduplicated) received some form of postsecondary education services. The unduplicated 21% comes from 9.9% (44,398) who received only university/college services (no business/vocational services), 8.3% (37,402) who received only business/vocational services (no university/college training), and 2.3% (10,168) who received both types of postsecondary educational services. All statistics are listed as unduplicated totals i.e., college only, vocational only, or both.

An important analysis was identifying people who may have already had or were currently enrolled in some form of postsecondary education, not related to their VR services. This number is important when considering the total number of VR closures participating in postsecondary education. The database does identify 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 examining people who report completing higher than grade 12 and are not receiving any post secondary education services, approximately 14.5% of VR recipients come with some postsecondary education not related to VR services. This number was added to the percent of closures receiving postsecondary services from VR when comparisons regarding non-VR data were made.

Special education is included with the highest grade completed item and is defined as instances where the person was not educated under a regular educational system (RSA, 1998). Twelve percent of VR 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 in contrast to 20.8% of people in regular education with high school or less and 26.5% of people with more than a high school education. People with mental retardation make up 74% of all those who were listed as having been in special education. People with mental retardation received by far the fewest postsecondary education services; only 7.2% received any type of such services as compared to over 20% of all others receiving VR services.

Rehabilitation Rates and Work Status

The impact of receiving postsecondary education services on employment outcomes was examined using several different measures. The simplest measure, rehabilitation rate, measures the percent of all people accepted for service who achieve a successful closure. RSA uses the ratio of people successfully closed (status 26) to all closures of people accepted for service who had an IPE developed (both status 26 and 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 rehabilitation 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%.

After considering whether or not a person had a successful closure, an important question to address is the nature of the employment outcome or work status at closure (see Closures section). The vast majority of all successful closures (87.5%) is in the first category of competitive labor market and is the primary focus of VR services. Postsecondary education services and work status indicate an important association as can be noted in Table 1. Note that groups (c) and (d), and groups (e) and (f) have been combined into single categories in this table. There is a difference of about 9% in the competitive employment rate for those individuals who receive some form of postsecondary education services.

Table 1: Distribution of work status, for successful closures, by postsecondary education services

Work status Percent receiving postsecondary education services

Business / None College Vocational Both

a. Competitive labor market 86 96 95 94
b. Extended employment 4 0.5 1 0.4
c & d. Unpaid family worker 7 2 2 2
e & f. Self-employed 3 2 2 4

Columns two and four add up to more than 100% due to rounding.

Aside from competitive labor market closures, the categories of extended employment and unpaid family worker/homemaker show the greatest differences between the postsecondary education groups. These differences are more apparent when different disability groups are closely examined. Extended employment was an outcome primarily for individuals with mental retardation. More than half of all the extended employment closures are for people with mental retardation (4,001 of 7,991), whereas people with mental retardation made up only 12.8% of the sample. For successful closures for people with mental retardation, there was a lower incidence of extended employment for those 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, to 4.9% for those receiving both. 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 (other closure rates include 88.4% for those receiving college only, and 90.8% for those receiving business/vocational services).

The percent of people in unpaid family worker/homemaker closures was 7% of all successful closures. However, for people with visual impairments, 45.9% of all successful closures are in this category. For people with visual impairments who received college services, however, the unpaid family worker rate of closures was much lower at 8.1%. The rate of closures into the competitive labor market was also quite different, 44.9% for those receiving no postsecondary services to 85.6% for those receiving college services. Corresponding differences were also found for the other education categories, the unpaid family worker rate being 15.0% and 13.3% for business/vocational services and both services respectively. There was a difference in the percentage of closures to the competitive labor market of 67.1% for business/vocational services versus 74.1% for both services. Severity of disability did not make a significant contribution.

For people with hearing impairments, college services were associated with a lower unpaid family worker rate of 2.1%, business/vocational services with a rate of 2.7%, and both services at 1.9% as compared to a 9.4% closure rate for individuals receiving no postsecondary services. The competitive labor market rate was higher at 96.7% for people receiving college services, 94.9% for business/vocational services, and 95.8% for those receiving both as compared to 86.8% for no postsecondary services received. Again when controlling for severity of disability, no major differences were noted.

To investigate other contributing characteristics, age was included as a factor. The age groups were defined as people aged 16-22, 23-35, 36-45, 45-59, and 60+. Over 50% of successful closures for people with visual impairments were 60 or older and 18% of people with hearing

impairments were 60 and above. Age was found to explain some of the differences in work status and disability especially for people with visual impairments. Over 75% of unpaid family worker closures for people with visual impairments were 60 or older and very few of these people received postsecondary education services (127 of a possible 5,925). The age that received the most postsecondary education services, those aged 23-35, showed a strong, less dramatic association. The unpaid family worker rate for those with no postsecondary education services in this age group was 15.3%, compared to those receiving college only services (a rate of 4%), business/vocational services (7%) and those receiving both (6%).

Earnings and hours worked

In keeping with generally accepted findings (Disability Statistics Center, 1997, U.S. Department of Labor, 1999, NCES, 2000), participation in postsecondary education was associated with increased earnings. Data on weekly earnings and hours worked for competitive labor market closures were examined. At closure, the mean earnings were $325/week for individuals who received college services only; 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 confirmed that these differences were statistically significant, $F(3, 190{,}648) = 2175.70$, $MSE = 52{,}832{,}031.19$, $p < .00001$. In terms of yearly income, those receiving college services made 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. The mean hours worked per week at time of closure was 36 for those receiving "college only" services, 34 hours for "business/vocational only," 33 hours for both services, and 32 hours per week for individuals receiving no postsecondary services. Table 2 shows the weekly earnings and hours worked based on type of postsecondary services received.

Table 2: Mean Weekly Earnings and Hours Worked by Postsecondary Education Services

Business/None/College only/Vocational only/Both

Earnings

$238 $325 $256 $257

Hours

32 36 34 33

Geographic Variations

Table 3 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. 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 3: Postsecondary Services Received by State

State	% of general population receiving any postsecondary or educational services	% receiving college enrolled in college services	Rank (1996)[a]	% receiving postsecondary VR services	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 18 4.9 33

South Dakota 22.8 13.5 19 4.8 36

West Virginia 22.9 13.2 20 4.7 39

Rhode Island 15.5 12.9 21 7.3 2

North Dakota 19.5 12.6 22 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 32 4.9 34

Kansas 17.5 10.4 33 6.7 5

Nebraska 23.3 10.4 34 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 38 4.5 46

Maryland 10.3 8.9 39 5.1 30

Delaware 16.9 8.6 40 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.

Discussion

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 this goal. Does the VR system provide such services to a significant degree? 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 states that 50% of adults with disabilities have completed some college (including 2-year vocational programs). The VR system paid for such services in 21% of all accepted closures in 1997. We also calculated that 14.5% of closures had some form of postsecondary education separate from the VR system. This can be viewed as about 35% of cases closed by VR represented individuals participating in postsecondary education, 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's postsecondary education participation rate of 72% (NCES, 1999).

We did not find postsecondary education services to be associated with rehabilitation rates. Depending on the type of services received, the rehabilitation rate sometimes appeared lower than for those who received no postsecondary services. From the strict perspective of the likelihood of successful rehabilitations, postsecondary education services did not show a significant effect. However, postsecondary education services did correlate with improved employment outcomes. From the agency's perspective of improved rehabilitation rates,

postsecondary education services may show no or little positive association, whereas from the individual's perspective of better employment outcomes, such services could be useful.

Our analysis supports other findings that the differences in employment outcomes for people receiving postsecondary services can be dramatic. Higher levels of educational attainment are associated with higher labor force participation rates, higher rates of employment, and higher earnings (NCES, 2000). The association in VR closures is also quite noticeable. For all successful closures, the earnings differences are substantial: a yearly income of $16,900 for those receiving college education and $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 exceeds the 1997 poverty threshold of $16,050 for a family of four. This is by no means exceptional income. However, it is far 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 cognitive disabilities 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 85.6% is impressive. People with mental retardation are also benefitted from postsecondary education services. There has been a decrease over time in the use of extended employment (sheltered workshops), but more progress needs to be made (Gilmore, Schuster, Timmons & Butterworth, 2000). Even though the numbers of people with mental retardation receiving postsecondary education are limited, an association with their work status is evident. We found a lower rate of extended employment closures and a higher rate of competitive labor market closures.

Implications and Future Research

Postsecondary education has been documented to have positive effects on people's employment. The Disability Statistics Center (1997), U.S. Department of Labor (1999), and National Center for Education Statistics (2000) confirm that postsecondary education is associated with higher earnings for the general population. The research here supports the finding that postsecondary education is associated with higher earnings and hours worked for people with disabilities in the Vocational Rehabilitation system. People receiving such services also achieved a higher incidence of competitive labor market closures.

The strong evidence that postsecondary education has an impact on employment outcomes is an important fact. VR offices could improve their outcomes by assisting those eligible for such services in obtaining some form of further education. It has been established that while such services have been provided to many individuals, increasing the availability of such services to people with more severe disabilities would also have a positive impact on outcomes. Positive employment outcomes for people with disabilities such as total blindness or mental retardation appear to be associated with postsecondary education services. Expanding the types of supports, such as educational coaches and assistive technology, could increase the accessibility of postsecondary education for people with more severe disabilities. The National Center for the Study of Postsecondary Education Supports is currently conducting research on types and effectiveness of such supports and has a summary of their initial pilot project listing types of

supports received including mentors, tutoring, and audit opportunities. That study, which is also providing information for a larger survey, discusses student satisfaction with services and also emphasizes services for faculty to assist them in working with students with disabilities. (Stodden & Dowrick, 2000).

This study presented findings and data that suggest the benefit of postsecondary education services to people in the VR system. More in-depth research on the types and effectiveness of postsecondary education supports, as well as how services are provided and paid for, are needed. The Rehabilitation Act Amendments of 1998 contain substantial language on interagency agreements between VR agencies and the state agency that controls postsecondary education. Research on effective collaboration between such agencies that lead to beneficial service provision should be undertaken to provide a framework for states or regions struggling with such collaboration.

While the data show associations between disability, work status outcomes, and postsecondary education services, they reflect only measures of association. Studies at the individual level are needed to measure cause and effect. Direct intervention studies that document students' services and supports, education, and employment outcomes are needed to guide VR and educators concerning the types of supports needed by students with disabilities.

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> **Commentary :** Jim Beck
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This article offers a wealth of information worthy of thoughtful consideration. Most of us know that people with disabilities are unemployed in America at a rate of nearly seventy-percent, but seldom has research clearly identified the underlying reasons leading to such a high rate of unemployment. This paper examines the relationship between employment outcomes and postsecondary educational goals for people with disabilities and points out the implications postsecondary education can have on the annual income of people with disabilities.

The fact that only twenty-one-percent of people with disabilities served by vocational rehabilitation receives support to pursue postsecondary education is troubling. An estimated fifteen-percent of people with disabilities receiving services from vocational rehabilitation are supported by other sources to pursue postsecondary education. It is common knowledge that for people without disabilities pursuing postsecondary education leads to good jobs with good pay and benefits. Seventy-two-percent of people without disabilities participate in postsecondary education.

Reading this article I could not help but wonder if vocational rehabilitation systems are guilty of encouraging people with disabilities to seek employment goals that marginalize their earnings, benefits and overall success in society. I hope reading this paper will move professionals in rehabilitation to follow the wisdom of Ken Stabler, former Oakland Raiders Quarterback, and "aim high" in setting career goals with people with disabilities when developing Individualized Plans for Employment.