United States General Accounting Office

GAO

Report to Congressional Requesters

August 1993

VOCATIONAL EDUCATION

Status in 2-Year Colleges in 1990-91 and Early Signs of Change

GAO/HRD-93-89

GAO

United States
General Accounting Office
Washington, D.C. 20548

Human Resources Division

B-247749

August 16, 1993

The Honorable Edward M. Kennedy
Chairman, Committee on Labor
and Human Resources
United States Senate

The Honorable Nancy Landon Kassebaum
Ranking Minority Member
Committee Labor and Human Resources
United States Senate

The Honorable William D. Ford
Chairman, Committee on Education and Labor
House of Representatives

The Honorable William F. Goodling
Ranking Minority Member
Committee on Education and Labor
House of Representatives

The purpose of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 (P.L. 101-392) is to improve overall vocational education program quality and ensure access to vocational programs for all students, including those from certain targeted groups, such as students with disabilities.[1] Although the act provides only about 10 percent of vocational education funding nationwide, many vocational education experts view its provisions as a driving force in setting national vocational education priorities.

In response to a mandate in the amendments, we have undertaken two 4-year studies—one of secondary schools and one of community, junior, and technical colleges and institutes—to identify changes in vocational education program quality and the participation of targeted groups between academic years 1990-91 (the year before the amendments took effect) and 1993-94. Our studies focus on four key areas addressed by the amendments. Specifically, our studies address the amendments' changes to (1) improve vocational education program quality nationwide, in part by

[1]The act defines vocational education as organized programs offering a sequence of courses that are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree. For example, colleges we visited had programs such as drafting technology and electronics technology.

encouraging specific educational approaches; (2) ensure targeted groups'[2] access to vocational education; (3) concentrate funding to ensure that programs are of sufficient size and scope to be effective, in part by establishing a minimum allocation; and (4) require assessments of vocational program quality.

The mandate requires that we report to the Congress by July 1, 1995. This interim report, requested by the House Education and Labor Committee, provides preliminary information to the Committee and to the vocational education community on the status of postsecondary vocational programs in the 1990-91 baseline year and changes reported in the first year under the amendments, 1991-92.[3]

Scope and Methodology

To do our work, we collected information through a survey. We surveyed a nationally generalizable sample of public and private, nonprofit institutions offering up to 2 years of postsecondary education, referred to in this report as colleges.[4] We evaluated the status of vocational program quality based on key education approaches identified in the Perkins amendments or by experts as being associated with quality programs. For example, the amendments encourage the implementation of technical preparation (tech-prep) programs that link the last 2 years of a high school vocational program with 2 years of postsecondary vocational education in a coordinated curriculum. We collected data on vocational program enrollments, including colleges' estimates of targeted group enrollments, for academic years 1990-91 and 1991-92, and obtained information on initial changes to programs and supportive services between these 2 years. We also obtained information on Perkins funding and how colleges assess program effectiveness. To supplement our survey, we visited five judgmentally selected colleges. (See app. I for a more detailed discussion of our scope and methodology.)

[2]The Perkins Act targets support to a variety of groups. Throughout this report we focus on students with disabilities, limited English proficiency, and those who are disadvantaged. Students can be academically or economically disadvantaged. Because there was no common definition of being academically disadvantaged among postsecondary institutions, we have defined disadvantaged students as recipients of Pell grants. These grants provide federal funds to economically disadvantaged students for tuition, fees, and supplies. Colleges we visited agreed with this definition.

[3]We reported on secondary school programs in GAO/HRD-93-71, issued July 13, 1993.

[4]Vocational education courses are also available through adult programs offered by public school districts and other educational institutions. The Department of Education states that over half the vocational education students between the ages of 18 and 34 take courses at institutions other than 2-year public colleges. This report, however, focuses on the postsecondary institutions most likely to receive Perkins funds.

Background

An estimated 93 percent of the nation's 2-year colleges provided vocational education programs in academic year 1990-91. At these colleges, 1.8 million students (or 43 percent of the total student population) were enrolled in vocational education programs. About 77 percent of the institutions received Perkins funding. On average, they offered 27 vocational programs. Little changed in academic year 1991-92.

Among other things, the amendments changed the method of funds distribution. Formerly, states allocated Perkins funds based upon a combination of (1) specific set-asides directed to serve members of targeted groups and (2) discretionary grants for program improvement. Current funding under the amendments no longer distinguishes between program improvement and serving targeted groups. Instead, the amendments require colleges to simultaneously improve their programs and ensure targeted groups have access to them. A letter from the House Education and Labor Committee stated that the amendments' removal of funding set-asides for specific targeted groups was controversial, and that it was concerned that targeted groups have better access to higher quality vocational education.

In academic year 1991-92 states were to allocate Perkins funds to colleges based upon the number of Pell grant recipients enrolled in the colleges' vocational programs. The Secretary of Education may approve alternate distribution plans if it would result in a more equitable distribution. To help ensure that funding is used for programs of sufficient size, that the scope and quality will be effective, and that targeted groups will benefit from the funding, the Congress established a minimum basic grant of $50,000 and required that recipients distribute the funds to a limited number of sites or programs with the greatest concentrations of targeted populations. As most colleges have only one location, they were to base funding decisions on concentrations of targeted groups within program areas.

The amendments require local applicants for Perkins funds to describe the program evaluation standards they will use to measure progress, report the number of individuals in each targeted population enrolled, and describe how access to programs of good quality will be provided to targeted groups. The amendments also required, by September 1992, statewide systems of performance measures and standards for local grant recipients to use in evaluating program effectiveness. The systems developed by the states are to include measures of student performance, such as competency attainment as well as measures of program quality. In

addition to the statewide systems guiding local assessments, states are to conduct assessments of program quality that include factors such as the integration of academic and vocational education, linkages between secondary and postsecondary institutions, and increased work skill attainment and job placement.

Results in Brief

Postsecondary vocational education programs at 2-year colleges need substantial improvement, but colleges report that change has begun. In the year before the amendments took effect (academic year 1990-91), most colleges had not implemented key approaches associated with quality programs. For example, only 21 percent of colleges with vocational programs reported having tech-prep programs in academic year 1990-91. However, in academic year 1991-92, 36 percent reported having tech-prep. Colleges attributed improvements, such as those made to curricula, largely to the Perkins amendments.

Changes designed to concentrate funds appear to have had little effect on the number of colleges funded in the first year after the amendments. States funded approximately the same number of colleges in both years, about 80 percent of all 2-year colleges with vocational programs. However, the average number of programs funded within colleges declined slightly in 1991-92.

Colleges appear to be making efforts to enroll and serve targeted groups. Students with disabilities and economically disadvantaged students participated in vocational education at estimated rates higher than nontargeted groups in both years; students with limited English proficiency participated at lower rates. Colleges offered targeted groups a wide variety of supportive services, such as tutoring and special adaptive equipment, in the year before the amendments, and 66 percent of the colleges reported adding services for targeted groups in the first year after the amendments. Most attributed this change to the Perkins amendments. On the other hand, about 10 percent said that they eliminated or reduced services.

We identified weaknesses in college-level program assessments in both academic years 1990-91 and 1991-92. For example, although in our survey colleges reported using a variety of outcome measures to assess programs, such as rates for job placements and program completion, 38 percent reported that they had not established standards by which to gauge their progress. Further, 28 percent of colleges did not collect placement data, a

key outcome measure. Also, 37 percent of those that collected placement data could not identify targeted groups in the data and, therefore, could not determine if these students obtained employment at rates comparable with nontargeted populations.

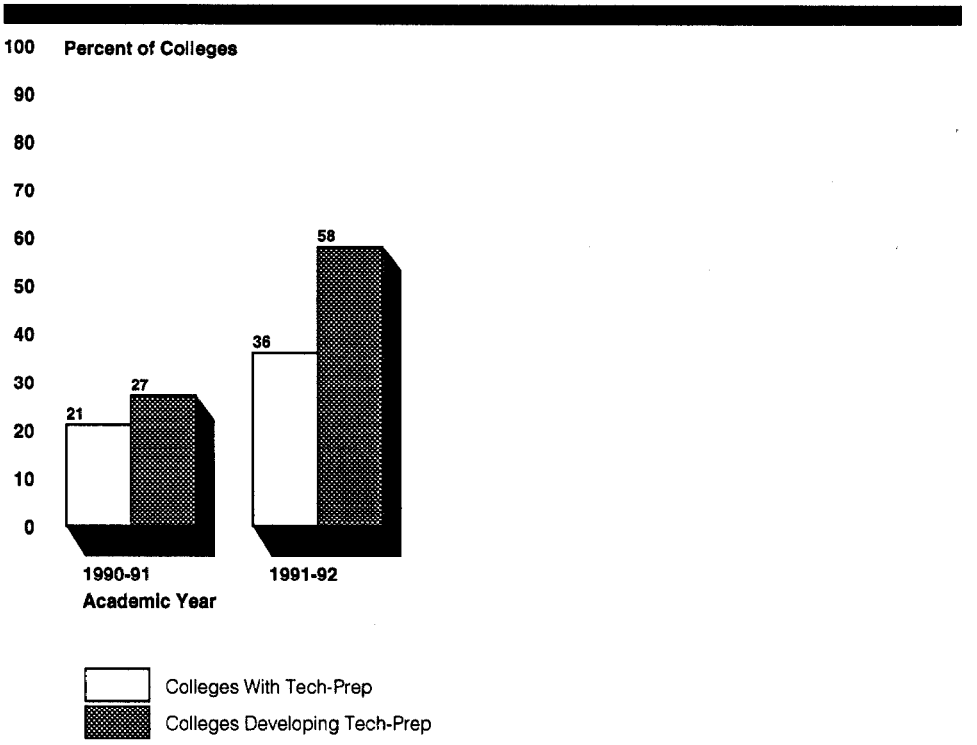
Program Improvement Needed, but Progress Has Begun

In the academic year before the amendments took effect (1990-91), few colleges reported using the quality approaches mentioned in the legislation or recognized by experts. For example, the legislation encouraged both tech-prep programs and the integrated teaching of basic academic skills and vocational skills. However, only 21 percent of the colleges had tech-prep programs. Likewise, most colleges reported infrequent use of specific types of academic integration. For example, only 7 percent reported that team teaching by academic and vocational instructors occurred to a great extent.

Colleges reported greater use of other approaches in academic year 1990-91, such as competency-based programs and business linkages, but our college site visits suggested that implementation varied. For example, our survey found that business involvement took a variety of forms, such as helping to develop curricula (at 92 percent of the colleges) or assess program quality (83 percent). Our site visits, however, indicated that the extent of business involvement varied program to program. Our review of advisory group agenda and minutes and discussions with program chairs showed that, indeed, some groups met frequently and were very active in suggesting curriculum changes, providing equipment, and hiring students who had completed a course of study (program completers). Others, however, met infrequently and were more likely to receive program briefings than provide specific assistance.

In the first year after the amendments (1991-92), colleges reported using more frequently the approaches we studied. The percentage of colleges with at least one tech-prep program rose to 36 (from 21), and 58 percent were developing programs. (See fig. 1.) Also, 45 percent reported increasing academic integration in 1991-92. Colleges also reported instituting a number of improvements primarily as a result of the amendments. For example, 79 percent said that they improved curricula, and 51 percent of those cited the amendments as the primary force behind the change.

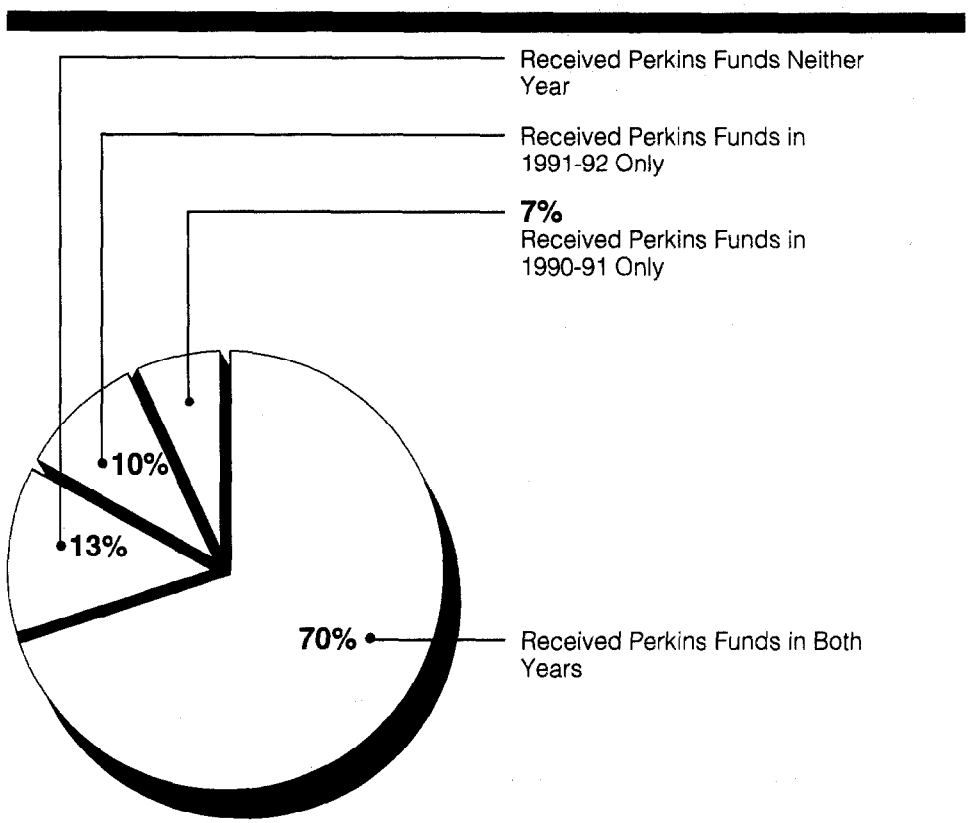
Figure 1: Estimated Percentage of 2-Year Colleges That Had, or Were Developing, at Least One Tech-Prep Program (Academic Years 1990-91 and 1991-92)



Little Change in Funding Allocations

In academic years 1991-92 and 1990-91, about the same number of colleges and programs received grant funds. As shown in figure 2, most colleges (70 percent) received Perkins funds in both years, and 13 percent did not receive funding in either year. About 7 percent lost Perkins funding in academic year 1991-92. We could not determine how many of the colleges that lost funding in 1991-92 did so because their basic grant allocation would have been below the $50,000 minimum. However, in 1990-91, 30 percent of all colleges reported receiving less than $50,000 in Perkins funds.

Figure 2: Estimated Extent to Which 2-Year Colleges Received Perkins Funds in Academic Years 1990-91 and 1991-92

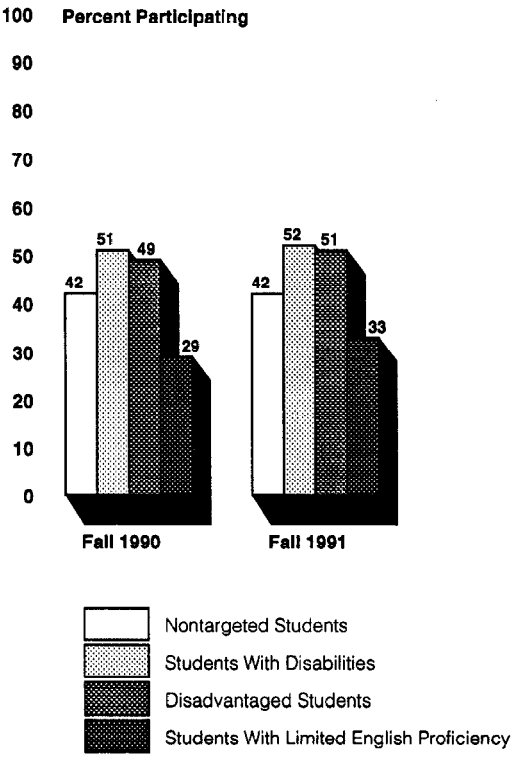


Some concentration of Perkins funding within college programs existed in both years. Further, the number of programs funded within colleges declined slightly in 1991-92. On average, colleges provided Perkins funds to 11 of 27 programs in 1990-91 and 9 of 27 in 1991-92. Most colleges reported that they allocated funds to campuses or programs based on concentrations of targeted populations. Officials of colleges we visited, however, generally had little specific documentation to support their allocation decisions except for equipment purchases. Also, data on number of programs funded may not account for all funds. Nationally, colleges reported spending almost half their Perkins funds on supportive services for targeted groups; most colleges we visited did not identify Perkins funds spent on such services with specific programs.

Some Targeted Groups More Likely to Enroll in Vocational Education Than Nontargeted Students

As shown in figure 3, college estimates indicated that disadvantaged students and those with disabilities were more likely than others to enroll in vocational education and that the percentage of each targeted group enrolled remained about the same from the fall of 1990 to the fall of 1991. Most colleges reported taking specific action to recruit targeted students in academic year 1990-91 and increasing those efforts in 1991-92. Recruitment included, for example, contacting vocational rehabilitation or social service agencies to inform their clients of postsecondary vocational education opportunities.

Figure 3: Estimated Percentage of 2-Year College Students Participating in Vocational Education Programs, by Group (Fall 1990 and Fall 1991)



Colleges offered a wide variety of supportive services to help ensure targeted groups' access to and success in vocational programs. Some services, such as readers for the blind, were limited to targeted students; other services, such as counseling, were available to any student through general funding. Services offered by at least 90 percent of colleges included remediation, tutoring, testing and assessment, and liaison with

social service agencies. Over 70 percent of the colleges cited changes in the Perkins amendments or funding amounts as the primary reason for expanding existing services for targeted groups, for adding new services, and purchasing equipment to accommodate targeted groups in 1991-92. On the other hand, about 10 percent of colleges reported eliminating or reducing services.[5] Our survey did not determine whether these colleges, or any others, had unmet needs for supportive services.

Assessment Systems Need Improvement

The amendments require local applicants for Perkins funds to describe the standards they use to measure program progress. Although the statewide systems of measures and standards called for by the amendments were not required to be in place at the time of our survey and site visits, most colleges reported collecting performance-related data.[6] However, our survey and site visits indicated that many colleges' assessment efforts were limited by a lack of standards and by incomplete placement data, a key outcome measure.

Over 90 percent of colleges reported using at least one program assessment measure in academic years 1990-91 and 1991-92. On average they used six measures. In both years at least 70 percent of colleges used program completion, student satisfaction, placements, and results of state licensing examinations.[7] However, at the colleges we visited, the performance data—whether collected on their own or as part of an existing state reporting system—were used for mostly informal monitoring rather than as part of a formal assessment system.

One major problem with colleges' use of performance data was a lack of corresponding standards, or benchmarks, against which to evaluate their progress toward program improvement goals. For example, in academic year 1990-91, although 83 percent of colleges reported using program

[5]Of the 448 colleges with vocational programs in our sample, 35 said they eliminated services, and 43 said they reduced services. Specific reasons cited included the amount of Perkins funding, removal of set-asides, other changes in the legislation, and other reasons not associated with the Perkins Act.

[6]The amendments also required that, by March 1991, the Department of Education establish a vocational education data system to provide the Congress with information for policy-making and to provide federal, state, and local agencies with information for program management, administration, and effectiveness. The Department has identified studies with data relevant to assessing vocational education on a national basis and plans to ensure that future research also addresses vocational education. In our report on Secondary Vocational Education we noted significant gaps exist in the data available.

[7]Colleges reported using employment-related measures other than placements less frequently. Starting salary was used by 49 percent, length of time to gain employment by 18 percent, and increase in wages over a 1-year period by 5 percent.

completion as an assessment measure, only 46 percent reported having standards for the proportion of students who should complete their programs. Further, when colleges had standards, they applied them to an average of only 11 out of 27 programs.[8]

Many colleges did not have placement data for program completers. Placement is one of the key assessment criteria listed in the legislation as a measure of performance. Also, in a 1991 survey by the National Center for Research in Vocational Education, states most often cited placements as one of the performance measures expected to be used to meet the act's assessment requirements. But 28 percent of the colleges did not collect placement data, and colleges that did report placement data did not report data for 30 percent of those who completed vocational programs. Also, over one-third of the colleges with placement data did not identify targeted groups.[9] Our site visits also indicated that colleges used a variety of data collection methodologies. The uneven quality of placement data may limit their usefulness for state and national level assessments on an aggregate basis, particularly for monitoring whether targeted groups are benefiting from efforts to improve program quality.

Agency Comments

The Department of Education provided written comments on a draft of this report (see app. V). The Department expressed concerns in several areas, including (1) the extent to which our sample addressed all postsecondary vocational education, (2) the relationship of enrollment of targeted groups to efforts to serve students in those groups, and (3) difficulties of using placement data to assess postsecondary program quality.

The Department noted that the majority of adults participate in postsecondary vocational education at sites other than those included in our survey, such as adult classes conducted in secondary schools, and questioned whether we therefore were addressing all of postsecondary vocational education. We clarified the report to indicate that our work is representative of vocational education programs in the types of postsecondary institutions most likely to receive Perkins basic grant funds, that is, community and junior colleges and technical institutes.

[8]These numbers may be overstated. Site visits and discussions with respondents indicated that some colleges misinterpreted program assessment standards as regular course or program completion requirements set for individuals rather than as goals for programs to achieve.

[9]Some colleges we visited also had difficulty documenting their enrollment estimates of targeted groups.

The Department also noted that vocational program enrollments of targeted group students are not necessarily reflective of efforts to serve these students. Although we discuss both student enrollment and services available to students in the report, we did not intend to imply a causal link between them.

The Department also stated that it is difficult to use placement data as a measure of program success at the postsecondary level because many students are already employed. We believe placement is an important indicator of success, though not the only one. However, most states have said that they plan to use placement in their system of performance standards and measures. Consequently, the Department's comments raise further concerns about the quality of data that will be available to accurately measure this indicator.

The Department made other comments that were incorporated as appropriate to this report.

We conducted our work between April and November 1992, in accordance with generally accepted government auditing standards. Appendix II presents additional details on our observations, and appendix III summarizes colleges' responses to our survey. Appendix IV shows placement data reported by respondents; an insufficient number of respondents reported placement data to allow us to generalize those data beyond the institutions reporting. In the back of this report is a list of other related GAO products on this subject.

We are sending copies of this report to other congressional committees, the Secretary of Education, the Secretary of Labor, and other interested parties. Please call me at (202) 512-7014 if you or your staff have any questions. The major contributors to this report are listed in appendix VI.

Linda G. Morra
Director, Education and
Employment Issues

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Abbreviations

NAVE	National Assessment of Vocational Education
SCANS	Secretary of Labor's Commission on Achieving Necessary Skills
tech-prep	technical preparation

Scope and Methodology

The 1990 amendments to the Perkins Act require that we study the effects of the amendments on access to and participation in vocational education for certain targeted populations—students with disabilities, disadvantagement, or limited English proficiency[1] —and the extent to which all vocational students receive basic academic instruction as a part of their occupational programs. This interim report addresses the first 2 years of our study: the designated baseline academic year of 1990-91 and the first academic year under the amendments, 1991-92. The final report, due by July 1, 1995, will cover all 4 years.

The amendments required that we consider such issues as

- targeted student enrollments and participation in vocational education programs;
- whether vocational education programs have addressed targeted groups' needs for supportive services, material, and equipment;
- the comparability of services provided targeted students with services provided to the nontargeted student population; and
- the extent to which academics are incorporated with vocational education courses.[2]

Also, because the amendments emphasized the need for access to quality vocational programs, we obtained information on a variety of other quality indicators cited in the legislation or by experts as being associated with quality programs.

We developed a questionnaire to obtain data on vocational program quality, enrollment estimates, program assessments and improvements, and funding. We asked for detailed information for 1990-91, the baseline year, and comparative information for 1991-92, the first year affected by the amendments. We mailed the questionnaire to a random sample of 563 public and private nonprofit 2-year colleges and institutes. We selected the sample from a universe of 1,126 institutions we compiled primarily by merging unduplicated membership listings from the American Association of Community and Junior Colleges and the American Technical Education

[1]The amendments also required information on foster children, which is applicable to secondary school programs but not postsecondary institutions.

[2]The amendments also listed items unique to children with disabilities at the secondary education level but not applicable to the postsecondary level (for example, the extent to which students and their parents are involved in selecting vocational education courses and programs). Further, the amendments requested data on the types and severity of students' disabilities, but none of the colleges we visited collected such detailed information on their students (some cited privacy concerns about collecting it).

Association.[3] We did not include in our universe providers of adult education courses not associated with 2-year colleges and technical institutes.

We obtained responses from 85 percent of the colleges surveyed. We did not verify data provided by respondents except at the four institutions we visited that were in our sample because the information provided was voluminous and represented estimates in many cases. We calculated sampling errors for estimates from this survey at the 95-percent confidence level. Unless specifically noted, the confidence interval of any estimated percentage cited in this report is plus or minus 3.4 percentage points or less. Where change is discussed between academic years 1990-91, it is significant at the 95-percent confidence level.

To supplement the information obtained from our survey, we visited five colleges: Bessemer State Technical College, Alabama; Laney College, California; Community College of Denver, Colorado; Reading Area Community College, Pennsylvania (not in our survey sample); and Del Mar College, Texas.[4] (See table I.1.) We judgmentally selected the locations for a mix of type and size of institution. Because the amendments emphasized targeted populations, we selected institutions with such populations. (Estimated enrollments of targeted groups in vocational programs at these colleges ranged from 29 percent to 75 percent.) At the colleges we interviewed administrators, faculty, staff, and students with disabilities. We reviewed enrollment, placement, and funding data. We also reviewed selected curricula and documentation on supportive services available to targeted groups. In addition, we discussed with local advocacy group representatives their view of the supportive services available to students with disabilities.

[3]The Department of Education confirmed that our approach of using the membership listings would provide a sufficiently complete and current universe of 2-year postsecondary institutions. To identify any additional colleges that were not members of the two primary organizations, we reviewed a commercially available guide to 2-year colleges and lists of selected vocational education conference attendees.

[4]In designing and pretesting the questionnaire, we also visited six community colleges, two technical colleges, and two private nonprofit technical institutes in Maryland, Ohio, Pennsylvania, South Carolina, and Virginia.

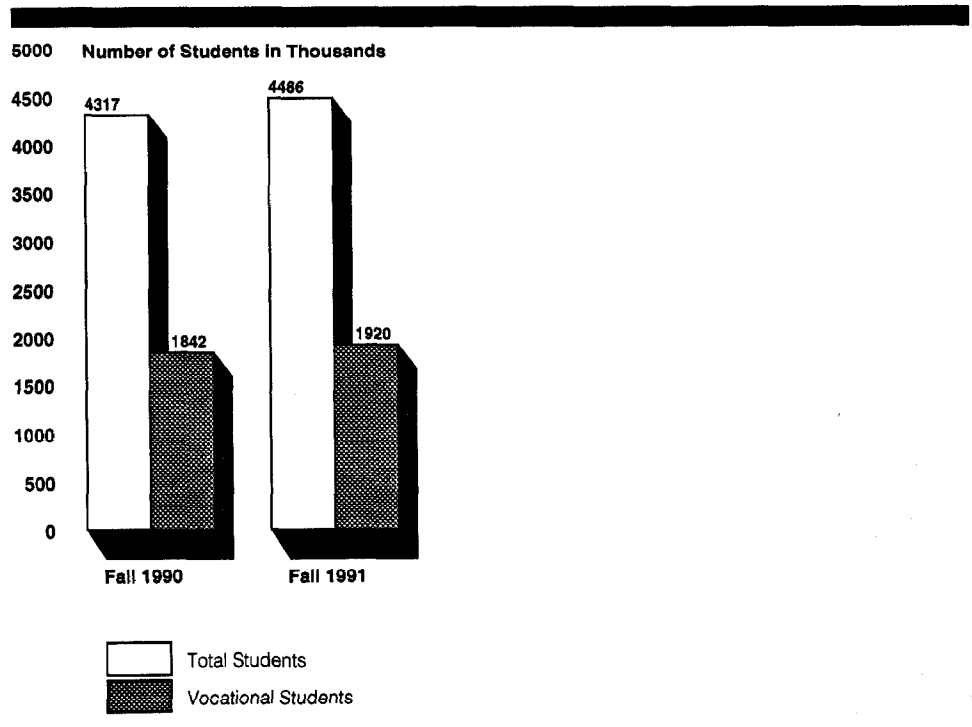
Table I.1: Profile of Colleges Visited

	Perkins basic grant funding by academic year		Estimated enrollment		Estimated vocational enrollment		Number of vocational programs	
	1990-91	1991-92	Fall 1990	Fall 1991	Fall 1990	Fall 1991	1990-91	1991-92
Bessemer State Technical College, Alabama	$52,084	$190,247	1,738	1,776	1,738	1,776	24	20
Laney College, California	288,545	301,467	10,755	11,822	3,442	4,019	22	21
Community College of Denver, Colorado	374,580	565,355	5,500	6,500	2,500	3,000	40	50
Reading Area Community College, Pennsylvania	261,782	298,974	2,389	2,909	1,655	1,905	32	32
Del Mar College, Texas	551,472	832,059	10,538	11,139	4,088	4,528	45	47

Postsecondary Vocational Education at 2-Year Colleges: Status in 1990-91 and Changes During the First Year of the Perkins Amendments

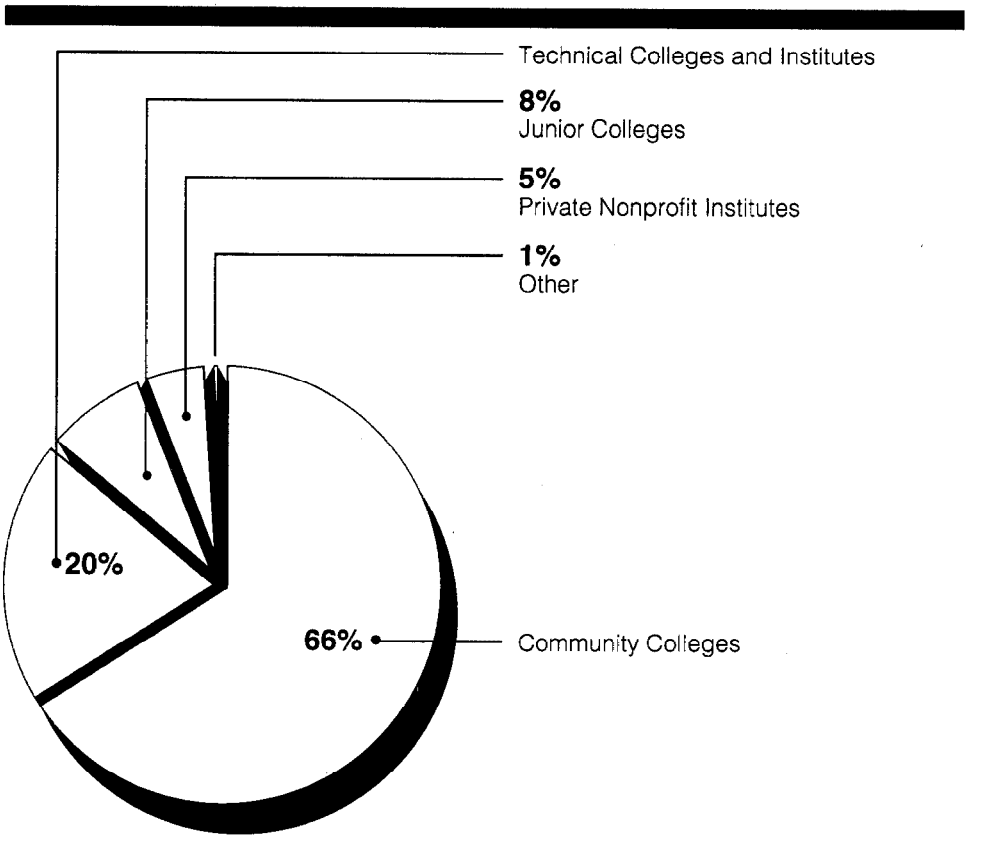
In academic year 1990-91, we estimate that 93 percent of all 2-year colleges, or about 1,000 colleges, offered an average of 27 vocational education programs in fields as diverse as automotive technology, nursing, culinary arts, computer assisted drafting, and electronics technology. As shown in figure II.1, nationwide about 43 percent of students in 2-year postsecondary institutions with vocational programs, or 1.8 million students, were enrolled in vocational programs in 1990-91. About 77 percent of 2-year colleges with vocational programs received Perkins funding. Overall, little changed in academic year 1991-92.

Figure II.1: Estimated Number of All 2-Year Postsecondary Students Compared With Estimated Number Enrolled in Vocational Education Programs (Fall 1990 and Fall 1991)



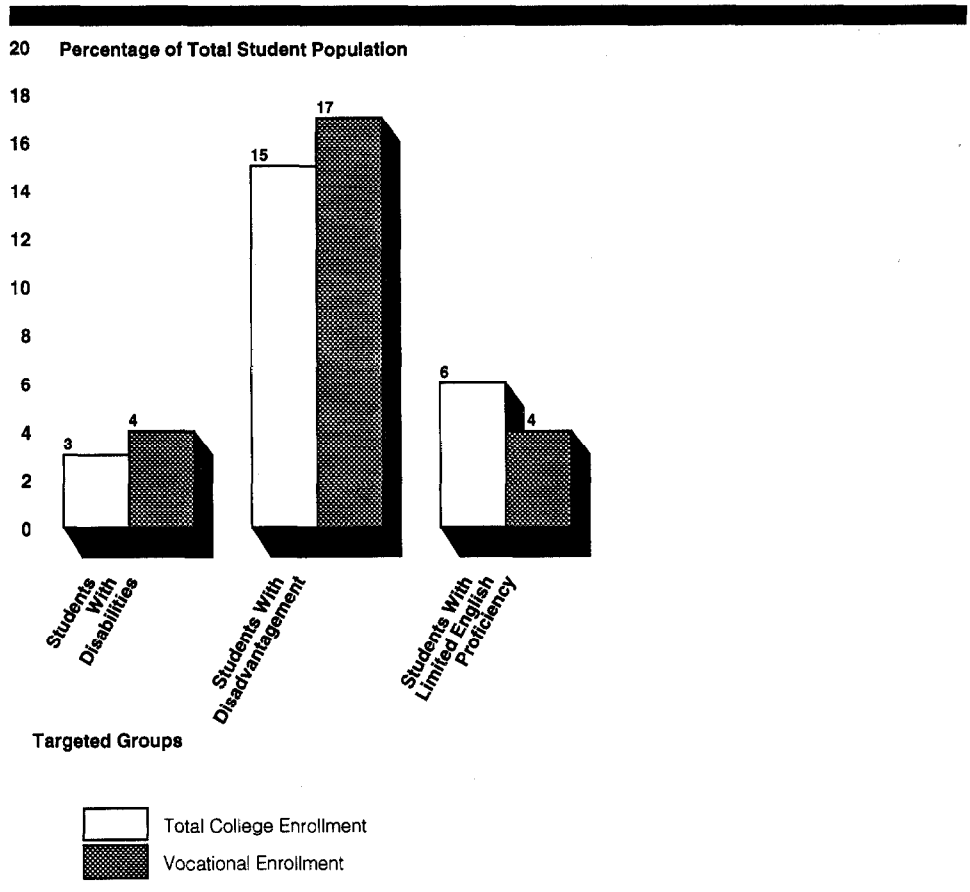
Two-thirds of the 2-year colleges offering vocational education were community colleges, as shown in figure II.2. Colleges reported that, overall, Perkins funds represented 3 percent of their total vocational education spending.

Figure II.2: Estimated Composition of 2-Year Colleges Offering Vocational Programs (Academic Year 1990-91)



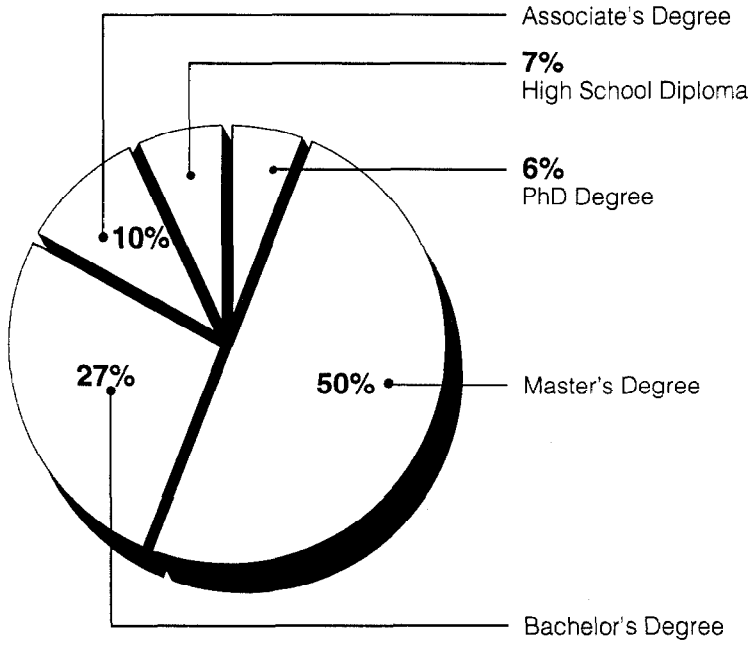
We estimate that targeted group enrollment in vocational programs mirrored their representation in the overall student population. In fall 1990, students with disabilities accounted for 4 percent of vocational enrollments, the economically disadvantaged—17 percent, and students with limited English proficiency—4 percent; in the overall student population, these targeted groups represented 3, 15, and 6 percent, respectively. (See fig. II.3.) Little changed in fall 1991.

Figure II.3: Estimated Percentage of Targeted Groups in the Overall Student Population of 2-Year Colleges Compared With Percentage Enrolled in Vocational Education Programs (Fall 1990)



Colleges reported an average vocational faculty size of nearly 50. Over half of these faculty members had graduate degrees (see fig. II.4). Also, colleges had an average of 17 faculty members (34 percent) with a professional license or certification, and 23 members (46 percent) with a vocational teaching certificate for a particular field. About 17 faculty members (34 percent) had continuing education credits, and 29 members (58 percent) had continuing exposure to the related industry or field of expertise.

Figure II.4: Estimated Percentage of Faculty in 2-Year Colleges by Education Level



We collected data on the extent to which colleges were using the following educational approaches associated with quality vocational programs:

- Tech-prep programs formally link high school and postsecondary education in a coordinated 4-year curriculum leading to an associate degree or a program completion certificate.
- Academic integration ties the teaching of basic academic skills, such as mathematics and communications, with vocational skills in an applied manner so students can better understand how the academic skills are used on the job.
- Linkages of business and other organizations enable them to share their expertise with the college to improve vocational programs. For example, business advisory committees might evaluate the curriculum and recommend changes to put it in line with current industry practices. Businesses might provide state-of-the-art equipment, work experiences for students, work opportunities for faculty to help update their skills, and adjunct faculty.
- Competency-based curricula specify the job-related tasks that students must master to perform a job in a particular occupation. They provide the

student with clear expectations for the knowledge, skills, and abilities required on the job. They may be used with task checklists to record the skills mastered.

- Competency certificates—granted in addition to degrees, diplomas, or certificates of program completion—list the specific job-related skills that a student has mastered in his or her vocational program. A prospective employer then has evidence of the tasks the student is capable of performing.
- Guarantees of completers give employers the assurance that if a student they hire cannot perform job-related tasks satisfactorily, the college will retrain the employee at no cost to the employer.

Some of these are cited in the legislation: tech-prep, academic/vocational integration, and linkages with the business community. Others have been mentioned by experts as being associated with higher quality programs: competency-based curricula, certificates of competency, and guarantees of completers to employers. (While we selected these particular indicators to evaluate overall improvement efforts, colleges and state education agencies might use a variety of other measures to assess specific program quality. For example, 69 percent of colleges reported using retention rates as a measure of quality.)

Placement of vocational program completers is another strong indicator of quality. The amendments require states to assess program quality, and they list placements as one criterion states could use. However, 28 percent of colleges said they did not collect placement data, and data were often incomplete for the 72 percent that collected it.[1] Because colleges that did not report data may differ substantially from those that did, we cannot generalize beyond those that collected it. Appendix IV shows placement data for those that reported it.

More Program Improvement Efforts Needed, but Changes Have Begun

Colleges need to improve their vocational programs. Many have not implemented the quality approaches stated in the Perkins amendments or acknowledged by experts as important to reforming vocational education. Further, where the approaches were used they often were not applied to all programs or did not benefit all students.

[1]Incomplete data are indicated by (1) the "status unknown" category reported to us and (2) the difference between the total number of students reported completing postsecondary programs and the sum of the individual placement categories (including those whose status was unknown). See appendix IV.

Tech-Prep Programs Being Developed, but Slowly

In academic year 1990-91, the year before the amendments, 21 percent of colleges reported having at least one tech-prep program, and 27 percent reported developing programs. By academic year 1991-92, 36 percent of colleges said that they had tech-prep programs, and 58 percent were developing them. On average, colleges that had such programs had only one in the year before the amendments. The average number of programs increased to two in 1991-92, however, possibly indicating that the number of tech-prep programs at individual colleges will increase over time as educators gain experience in developing tech-prep curricula. In 1991-92, 35 percent of colleges reported taking advantage of grants that were available under the amendments to develop tech-prep programs.

Some Efforts Being Made to Integrate Academic and Vocational Instruction

The Perkins amendments and vocational education experts recognize that an important approach in helping to ensure students have both the academic and occupational skills needed for employment is teaching academic skills in a more applied manner, linking theory to practice. Nevertheless, the predominant method of teaching academic skills, such as algebra and writing, in academic year 1990-91 was in traditional academic classes. More innovative techniques were used much less frequently (see table II.1). For example, 39 percent reported formally incorporating academics into vocational curricula to a great extent, but only 7 percent reported using team teaching by academic and vocational faculty to the same extent.[2]

Table II.1: Estimated Percentage of 2-Year Colleges Reporting Use of Academic Integration Techniques to a Great or Very Great Extent in 1990-91

Method of integration	Percentage of colleges
Vocational curricula incorporated academic skills	39
Academic curricula incorporated vocational aspects	33
Academic programs were designed for vocational programs	30
Academic and vocational faculty taught in teams	7
Other	41

Many colleges, 45 percent, said that they did somewhat more or much more to integrate academic and vocational instruction in 1991-92 than they had in 1990-91. One community college we visited was in the process of revising its curricula to incorporate the basic skill concepts articulated by the Secretary of Labor's Commission on Achieving Necessary Skills

[2]Of the 41 percent of respondents to the question who said that they used other methods to a great extent, nearly one-third did not specify the approaches used. Those that cited a method often referred to tutoring/learning laboratories and computer-assisted instruction in basic skills. Others mentioned variations of the methods listed in our questionnaire.

(SCANS) in June 1991.[3] For example, students would be expected to demonstrate their ability to express themselves in writing assignments related to their vocational programs.

Business Linkages Common but May Vary in Effectiveness

Nearly all colleges in academic year 1990-91 reported receiving assistance for their vocational programs from business, industry, and community organizations or agencies. As shown in table II.2, this assistance took many forms. Nearly one-third of the colleges said that they received more assistance from business and industry in 1991-92 than they did the previous year.

Table II.2: Estimated Percentage of 2-Year Colleges Reporting Business and Other Linkages in Academic Year 1990-91

Contribution	Percentage of colleges
Helped with curriculum	92
Donated equipment/materials	87
Provided work-study, co-op, apprenticeship positions	86
Advised students on skills needed in workplace	84
Assessed program quality	83
Taught in institution	82
Helped develop competency standards	64
Faculty worked in industry for professional development	62
Made facilities available	60
Donated money	59
Evaluated students for competency attainment	44
Other	77

Note: The extent to which businesses and other organizations made specific contributions to colleges varied from a little extent to a very great extent.

Our observations from our site visits suggest, however, that the extent of business involvement varied widely among programs within individual colleges. Although most programs had business advisory committees, some were very active and involved, and others met infrequently or appeared to merely receive briefings on program status. A number of program chairs said that their advisory committees had not been active, but they acknowledged that such committees can be very helpful. Where

[3]The SCANS task force was directed to advise the Secretary of Labor on the level of skills required to enter employment. Among other things, SCANS concluded that two key parts comprise workplace knowledge: skills competencies (such as interpersonal skills and the ability to collect and process information) and a skills foundation (including reading, mathematics, and thinking skills).

businesses were actively involved, the effect on programs was often profound. For example, business partnerships resulted in the following:

- A major corporation donated nearly all the equipment for a a community college's computer technology program designed specifically for students with disabilities.
- Two major automobile manufacturers provided specific task-oriented curricula and equipment, including motor vehicles, for the automotive technology program at a technical college (a tech-prep program was also being developed to link high school automotive programs with the college's program). In addition, local automobile dealerships provided employment opportunities.
- A health care program at a community college benefited from practicums at a local hospital and from advice on current medical techniques and the college's program offerings, such as using a new device to take temperatures through the patient's ear and incorporating mammography training into the curriculum.
- A state restaurant association helped fund the construction of a facility for a college's restaurant management and culinary arts programs.

Competency-Based Curricula Reportedly Used, but Could Be Applied More Widely

Vocational education experts point to competency-based curricula as a major factor in helping students understand specifically what skills are needed in the workplace and directing their efforts accordingly. However, nearly one-third of colleges reported that in academic years 1990-91 and 1991-92 they had not incorporated competencies into their curricula to detail the knowledge, skills, and abilities required of students to successfully complete a particular vocational course and prepare themselves for the tasks required on the job. And colleges that reported using competency-based curricula had them for only about half their programs, on average. Although some vocational courses at colleges we visited were competency-based with very specific task lists for students to master (this was particularly true in such areas as electronics technology, nursing, and automotive technology), others provided little more than general course outlines that did not provide students with a clear understanding of specific job requirements in that occupation.

Vocational education experts point out that employers, or organizations representing the industry, should be involved in developing lists of needed competencies, as they best know the skills required for a particular occupation. Colleges responding to our survey cited a number of sources for their competency-based curricula. Local business and industry were

reported as a source, or partial source, for an average of 5 programs (out of 27), while national or state trade, industrial, health, or professional organizations were mentioned as a source or partial source of competencies for 5 programs. Other sources included regional accrediting organizations, state licensing requirements, the state government, and the college on its own.

Competency Certificates Were Seldom Used

Experts support the use of competency certificates to supplement degrees, diplomas, or program completion certificates because they list for potential employers the specific tasks the student is capable of performing. However, in academic year 1990-91 only 34 percent of colleges provided any of their vocational completers with a certificate of competency. On average, a certificate was available for three of their programs. There was little change in 1991-92.

Few Colleges Guaranteed Completers

Some colleges assert the quality of their programs by offering to retrain, at no cost to an employer, any vocational program completer who cannot perform satisfactorily on the job. Nearly 11 percent of colleges said they provided such guarantees in academic year 1990-91 (and 2 percent more said they did in 1991-92). Even so, 87 percent of colleges did not offer a guarantee either year. One college we visited offered up to 9 credits of retraining, and another thought that the state would eventually require a guarantee.

Little Change in Allocation of Perkins Funds

The 1990 amendments made changes in program funding to help ensure that programs are of sufficient size and scope to be effective while also providing access to targeted groups. The amendments established a minimum basic grant of $50,000. Additionally, they required grant recipients to limit the number of sites and programs funded by allocating their Perkins funds to sites or programs with concentrations of targeted populations. Although some different colleges were awarded funds in the 2 academic years studied, there was little overall change in either the number of colleges or the number of programs funded.

The $50,000 minimum basic grant provision in the amendments appears to have had little effect on the number of colleges funded.[4] Nationally,

[4]States distribute Perkins basic grant funds to postsecondary institutions based on the number of Pell grant recipients (that is, disadvantaged students) or other approved method. Consequently, colleges with high enrollments of disadvantaged students would tend to meet the minimum grant amount and receive Perkins funding.

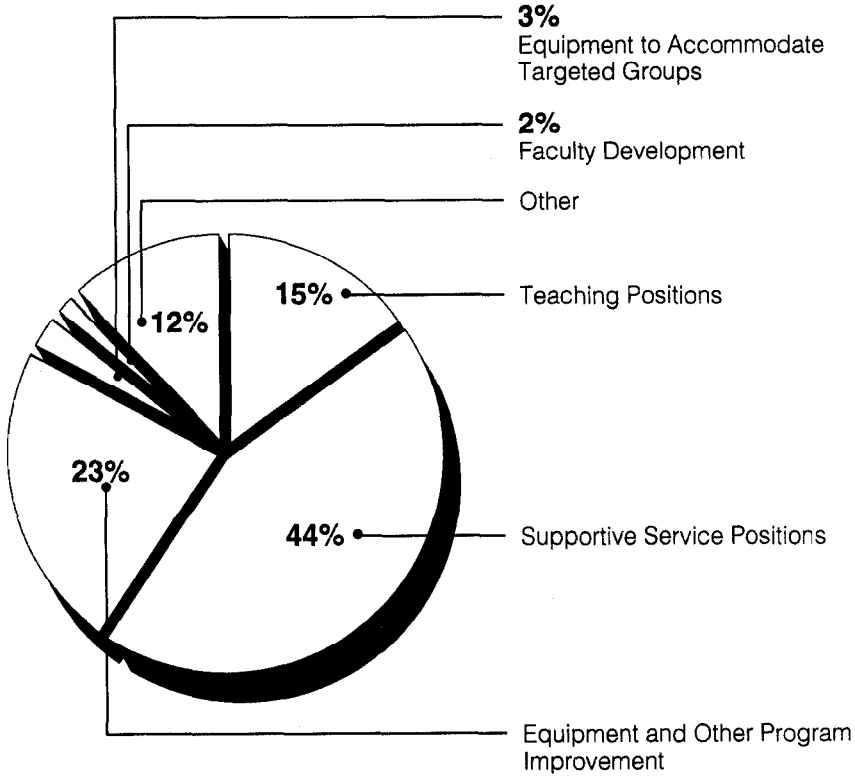
77 percent of colleges with vocational education programs received Perkins basic grants in 1990-91, and 80 percent received them the next year.

In accordance with the purpose of the amendments, most colleges reported making funding allocation decisions based on consideration of target group concentrations. That is, 67 percent of colleges that received Perkins funds for 1991-92 said they allocated the money based on programs that served a concentration of targeted populations, and 11 percent reported choosing campuses on that basis; 15 percent chose programs that needed to serve more targeted populations.[5]

Colleges concentrated their Perkins funds on fewer programs to a slight extent in 1991-92. The average number of programs receiving Perkins funds fell from about 11 in 1990-91 to 9 in 1991-92. However, with a reported average of 27 programs in both years, colleges were concentrating their resources even before the amendments. Colleges also reported spending the funds in about the same way in both years. As shown in figure II.5, the largest category of expenditure in 1990-91 was staff positions to provide supportive services.

[5]Eight percent reported using other methods, such as a combining these methods or allocating the funds based on the general need to provide supportive services for targeted groups. But some based their allocations on program improvement needs—including equipment—rather than providing access for targeted groups.

Figure II.5: 2-Year Colleges' Reported Perkins Expenditures in 1990-91



Note: Does not add to 100 percent due to rounding.

Targeted Group Access to Vocational Programs

Disadvantaged students and those with disabilities participated in vocational education at rates higher than nontargeted students in both years for which we collected data; those with limited English proficiency participated at lesser rates. Colleges also reported that a wide variety of supportive services, which facilitate access to and success in vocational programs, were available to members of targeted groups.

Some Targeted Groups More Likely to Participate in Vocational Programs Than Nontargeted Students

The proportion of disadvantaged students and students with disabilities enrolled in vocational education programs was higher than the proportion of nontargeted students enrolled; a lower proportion of students with limited English proficiency was enrolled. More specifically, 49 percent of students who were economically disadvantaged, 51 percent of those with disabilities, and 29 percent with limited English proficiency participated in

vocational education in fall 1990, compared with 42 percent of nontargeted students. From the fall of 1990 to the fall of 1991, the proportion of students from each targeted group enrolled in vocational programs remained about the same.[6]

A Wide Variety of Supportive Services Were Available

Supportive services, such as tutoring, interpreters for students with hearing impairments, and readers for the blind, help enable students to participate successfully in vocational programs. Some supportive services are available for all students while others are unique to a targeted group. Nationally, colleges reported spending more for supportive services as a result of the Perkins amendments. At four of the colleges we visited, there was at least one office designated to assist targeted groups; the fifth, a smaller college, appointed a staff member with a disability as the focal point to secure services for students with disabilities.

According to our survey, the most prevalent services provided to targeted groups in 1990-91 were remediation (96 percent), tutoring (94 percent), and testing and assessment (94 percent). About half the colleges reported providing interpreters for students with hearing impairments and readers for students with vision impairments. Sixty-eight percent of colleges said that they provided special or modified equipment to accommodate students with disabilities. And 58 percent reported that daycare was available for the children of students. Fifty-four percent of colleges reported providing supportive services to a greater number of targeted students in 1991-92 than they did in the preceding academic year.

Targeted groups also had access to job placement services that were available to all vocational students to help them obtain employment in the area of their training. In academic year 1990-91, colleges reported providing career counseling (97 percent), career assessment (89 percent), listings of job openings (89 percent), career exploration (89 percent), and resume preparation (89 percent). Additionally, staff we interviewed who provided supportive services to targeted populations at colleges we visited said they sometimes provide special placement-related services, such as

[6]In commenting on a draft of this report, the Department of Education noted that the proportion of students with limited English proficiency increased by 4 percent and that this represented significant progress. Although the estimated proportion of limited English proficient students enrolled increased by 4 percentage points, this change is not statistically significant at the 95-percent confidence level. At that level, the actual change could be an increase of as much as 8.72 percentage points or a decrease of up to 0.64 percentage points. Because the confidence interval includes a possible decrease, we cannot conclude that the proportion of students enrolled increased. (The estimated proportion of disadvantaged students and students with disabilities enrolled also increased somewhat, but those increases also were not statistically significant.)

contacting prospective employers to help find suitable employment opportunities for students with disabilities.

Services least available included personal care attendants (16 percent) and transportation for students with disabilities (31 percent). Our questionnaire did not address unmet needs for services. However, during our site visits, some college officials said there was a greater need for certain types of services. Officials told us that they had the most difficulty meeting the overall need for remediation courses and tutors to help disadvantaged students who enroll in college without the basic academic skills needed in their programs. All five colleges we visited provided tutors, but some staff said that more tutors were needed to meet the need. Support staff at three colleges also mentioned that limited capacity at daycares might discourage some students from enrolling in vocational programs.

One college said there was a need for language interpreters due to rising numbers of foreign-born students. This college had English-as-a-Second-Language courses, but not specifically for vocational subjects. Another college we visited had several of these courses specifically for vocational students at technical centers in neighborhoods where high numbers of limited English proficient people reside, and more programs were being developed.[7]

We spoke with a few students with disabilities at each college we visited. They told us that their colleges were supportive and either did or would accommodate any needs brought to their attention. Similarly, representatives of local advocacy groups for people with disabilities offered no criticism of services available to students with disabilities at the colleges we visited and identified no institutional barriers limiting access to vocational programs.

Colleges Recruited Targeted Groups for Vocational Programs

In academic year 1990-91, 78 percent of colleges reported special recruitment efforts for vocational programs specifically directed toward members of targeted groups. Recruitment most often occurred at high schools (86 percent), through the media (79 percent), and at college fairs (76 percent). But many also reported more specialized outreach directed,

[7]As discussed above, survey results indicated that students with limited English proficiency participated in vocational education less than all other groups. Also, about half the colleges said that English-as-a-Second-Language courses were available for limited English proficient students. Our work did not investigate the relationship between availability of language support services and level of enrollment.

for example, to Job Training Partnership Act programs (72 percent), social service agencies (72 percent), vocational rehabilitation agencies (68 percent), vocational-technical high schools (43 percent), schools for students at risk of not completing secondary education (34 percent), and schools for students with disabilities (25 percent).

System Weaknesses Limit Ability to Assess Program Quality

Although statewide systems of measures and standards were not yet in place at the time of our survey, almost all colleges reported conducting program assessments. However, survey data and information obtained during site visits indicated that weaknesses in the assessments and in management information systems limited colleges' ability to determine program improvement needs and evaluate progress.

Colleges Reported Performance Measures, but Standards and Data Were Lacking

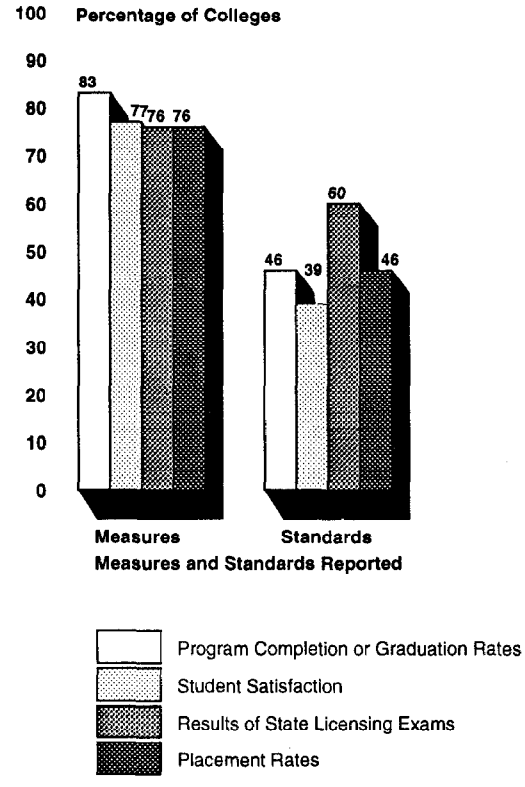
Survey responses indicated that in academic year 1990-91, 92 percent of colleges used, on average, six performance measures in assessing programs.[8] There was little change the following year. The most commonly used measures were program completion or graduation rates (83 percent), student satisfaction (77 percent), postcompletion placement rates (76 percent), and results of state licensing examinations (76 percent). (See fig. II.6.)

Although most colleges reported having data on program measures, such as those above, most did not use standards (for example, that 85 percent of program completers should obtain employment in a training-related occupation) to assess progress on these measures. For example, in 1990-91, 73 percent of colleges collected data on placement rates, but only 46 percent said they had standards for placements.[9] Having such standards enables a college to determine not only if it is making progress, but the extent of such progress. On average, colleges reported standards for about half of the measures used (about 3 of 6). Also, standards covered an average of 11 programs out of 27, or only 41 percent of programs. There was a small increase in the use of standards, the number of measures for which colleges set standards, and the number of programs covered in 1991-92.

[8]We did not determine whether data were collected on a program-level basis to evaluate individual programs or collected in aggregate for more generalized, collegewide monitoring.

[9]Although 76 percent of the colleges reported using placements to assess their programs, only 72 percent said they had placement data.

Figure II.6: Estimated Percentage of Colleges Using Measures and Standards in 1990-91 (for Top 4 Measures)



Even these numbers might be optimistic. Colleges we visited did not use measurable standards to assess their vocational programs. Some college officials with whom we discussed their survey responses had misinterpreted "standards" as course completion requirements for individual students instead of performance standards for programs or institutions. Or they had only very general and informal criteria for evaluating performance instead of specific, numerical standards.

Placement Data Were Limited

Although placements are a key quality indicator, 28 percent of the colleges did not collect placement data in any year; and those that did reported that they lacked information for 21 percent of all completers and 30 percent of vocational completers in the most recent class for which they had information.[10] Further, differences in methodologies used for collecting

[10]Colleges reported a total of 118,350 vocational completers but gave placement information for only 82,832 of them.

placement data raise questions about the usefulness of colleges' data for local or aggregated state or national level assessments.[11] For example, the frequency of data collection varied. Although many indicated they had data for 1990 graduates, four respondents to our survey reported last collecting placement data for 1985 graduates. The quality of the methodologies also varied significantly among the colleges we visited. For example, one college relied on faculty to know and report placements, and any placement counted, including part-time jobs while the student was still enrolled in a program. In contrast, another college surveyed program completers by mail and followed up by telephone; it achieved an 83-percent response rate.

Further, of the 72 percent of colleges that reported collecting placement data, only 41 percent said they identified all targeted groups; 37 percent said they did not identify any targeted groups. Consequently, most colleges would not know if students in these groups were encountering more difficulty obtaining quality employment than other students. Nor would their assessment systems identify the need to modify a curriculum or provide special placement services to increase employment opportunities for targeted students.

Colleges that were able to provide placement data reported that 42 percent of their vocational program completers were working in the area of their training, and 7 percent went on to a 4-year college. In comparison, 34 percent of all completers obtained employment in their area of training, and 20 percent entered a 4-year college. Appendix IV provides more detail on the placement data that colleges were able to provide. However, the data from the sample cannot be generalized to the universe of colleges.[12]

Enrollment Data Were Limited

Although Perkins recipients must report targeted group enrollments in grant applications to their states, 20 percent of colleges with vocational programs did not report estimated enrollments to us for one or more targeted groups. Those who reported estimated enrollment data on targeted groups reported obtaining their information from a variety of sources. For example, about one-third of the colleges said they identified students with disabilities from questions asked on the admissions application and another one-third from requests for services. The

[11]Data do not necessarily need to be aggregated from individual colleges. For example, data could be extracted from state employment insurance records.

[12]We cannot determine whether the characteristics of respondents to the placement question would be sufficiently similar to those not sampled to allow for generalizing to the universe of 2-year postsecondary institutions.

remainder were identified through student assessments, by faculty, from high school records, or other sources. Several colleges we visited had difficulty documenting their enrollment estimates. Although their estimates appeared to have been reasonable, they acknowledged weaknesses in their management information systems. For example, colleges that identified targeted students through requests for services sometimes did not collect into a central information system the data available from the various offices that provide supportive services.

Aggregated Responses to Survey of Postsecondary Institutions

Aggregated Responses to Survey of Postsecondary Institutions
U.S. GENERAL ACCOUNTING OFFICE
Survey of Postsecondary Institutions

INTRODUCTION

With the enactment of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 (P.L. 101-392), the Congress mandated that the U. S. General Accounting Office conduct a study of vocational-technical education with specific emphasis on special population students. To do this we are surveying a random sample of postsecondary institutions to gather information about vocational-technical education and special populations.

The purpose of this questionnaire is to collect information about your experiences with vocational-technical education during the 1990-1991 and 1991-1992 academic years. We will conduct a similar survey in 1994.

INSTRUCTIONS

This questionnaire seeks information on the content of, participation in, and funding for vocational-technical education.

Because there are many postsecondary institutions and many different types of programs and courses offered under the general title of "vocational-technical education," we are using the definition from the 1990 Perkins Act amendments.

The act defines a vocational education program as an "organized educational program offering a sequence of courses which are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree." In this questionnaire, any reference to a "vocational-technical program" refers to such a sequence of courses. Do not include non-credit courses, or courses such as continuing education, personal growth, or exploratory courses that are not part of a sequence leading to an occupational skill.

The questionnaire includes questions on the access to and participation in vocational-technical education by students who are members of certain special population groups. Special populations are those who have disabilities, are academically and economically disadvantaged, or have limited English proficiency.

A service is formal support for special populations. A glossary of these and other important terms used in this questionnaire appears on the last page of the questionnaire.

We realize your time is very limited, and that in order to answer all of the questions you will probably need to consult with other people. Please designate one person in your institution to have overall responsibility for completing this questionnaire, and provide the following information so that we may call to clarify answers, if necessary.

Name:_____

Title:_____

Telephone number: _____

If you have any questions about this questionnaire, please call Richard McGeary of our Philadelphia Regional Office at (215) 574-4000, or ask for one of his staff members.

Please return the questionnaire in the enclosed postage paid envelope **within 20 working days** of receipt to:

Richard McGeary
U.S. General Accounting Office
Suite 760
841 Chestnut Street
Philadelphia, PA 19107

OTHER QUESTIONNAIRES ON THIS TOPIC

You might recently have received a questionnaire for the U.S. Department of Education's National Assessment of Vocational Education (NAVE), a study that is also required by the Perkins Amendments. We recognize that it will take time to respond to both questionnaires, and we have tried to keep the burden this places on you to a minimum.

At first glance, this questionnaire appears similar to the NAVE questionnaire. By and large, however, we have avoided asking for the same information the NAVE questionnaire asks for, and the two questionnaires actually differ significantly.

A key difference is that the NAVE questionnaire collects data primarily for academic year 1991-1992 while here, we ask for information primarily for 1990-1991. In the two instances where this and the NAVE questionnaire ask for the same information--questions about funding and enrollment--the questions here closely resemble the NAVE's so that you can easily use your responses to the NAVE questionnaire in responding to this one. We also try to make your task easier by asking for estimates in many questions rather than for actual counts.

Note: 478 2-year colleges returned the questionnaire. The "n" shown for each item denotes the number of colleges that responded to that item.

With the exception of questions 1 through 9, percentages presented here are national estimates for 2-year colleges with vocational-technical education programs. Percentages noted for questions 1 through 9 are estimates for all 2-year colleges, whether or not they have a vocational-technical program.

Numbers and dollars, unless otherwise noted, are estimates of totals nationwide.

Due to rounding, percentages may not always total 100%

INSTITUTIONAL PROFILE AND PERKINS FUNDING

1. Which of the following best describes this postsecondary institution as it operated during the 1990-1991 academic year? (CHECK ONE) ***(n=477)***

63%	Community college
18%	Public technical college or institute
5%	Public junior college
8%	Private junior college
1%	Private technical college
6%	Private non-profit institute
N/A*	Private for-profit institute ---> STOP! PLEASE RETURN THIS QUESTIONNAIRE
1%	Other (PLEASE SPECIFY)

****2-year colleges that indicated they were private for-profit were excluded from the survey.***

2. Did your institution receive <u>any funding</u> for <u>vocational-technical education</u> from any source, for either the 1990-1991 or 1991-1992 academic years? (CHECK ONE) ***(n=477)***

4%	Yes, for the 1990-1991 academic year only---> GO TO QUESTION 3
2%	Yes, for the 1991-1992 academic year only---> GO TO QUESTION 3
86%	Yes, for both years---> GO TO QUESTION 3
8%	No, received no funding for either year--> GO TO QUESTION 4

3. In the table below, for vocational-technical education in your institution during (A) the 1990-1991 and (B) the 1991-1992 academic years, provide your best **estimate** of the total funding your institution received from each source listed below. (ENTER AMOUNTS; IF NONE ENTER "0")

	Source of funds for vocational-technical education	1990-1991 academic year (A)	1991-1992 academic year (B)
1.	Tuition (excluding Pell grants) and fees	*(n=420)* $ *936,255,000*	*(n=415)* $ *1,018,305,000*
2.	Local funds	*(n=407)* $ *810,532,000*	*(n=400)* $ *816,061,000*
3.	State funds	*(n=420)* $ *2,543,340,000*	*(n=414)* $ *2,517,151,000*
4.	Federal funds:		
4a.	Perkins basic grant	*(n=426)* $ *146,699,000*	*(n=426)* $ *158,301,000*
4b.	Perkins competitive grants	*(n=340)* $ *5,994,000*	*(n=410)* $ *42,201,000*
4c.	JTPA 8% funds	*(n=404)* $ *17,115,000*	*(n=404)* $ *17,700,000*
4d.	Other JTPA funds	*(n=409)* $ *66,915,000*	*(n=409)* $ *68,228,000*
4e.	JOBS funds	*(n=398)* $ *6,893,000*	*(n=400)* $ *11,357,000*
4f.	Pell grants	*(n=414)* $ *467,039,000*	*(n=413)* $ *550,214,000*
4g.	Other federal funds	*(n=412)* $ *135,400,000*	*(n=407)* $ *154,907,000*
5.	OTHER (gifts, endowments, internal sources, etc)	*(n=392)* $ *218,333,000*	*(n=388)* $ *227,168,000*
6.	TOTAL YEARLY FUNDING FOR VOCATIONAL-TECHNICAL EDUCATION IN THIS INSTITUTION --->	*(n=411)* $ *5,204,778,000*	*(n=408)* $ *5,389,232,000*

4. Did your institution receive a Perkins basic grant for either the 1990-1991 or 1991-1992 academic years? (CHECK ONE) *(n=477)*

- *7%* Yes, for the 1990-1991 academic year only---> GO TO QUESTION 5
- *10%* Yes, for the 1991-1992 academic year only---> GO TO QUESTION 5
- *70%* Yes, for both years---> GO TO QUESTION 5
- *13%* No, received no grant for either year--> GO TO QUESTION 9

5. For (A) the 1990-1991 academic year and (B) the 1991-1992 academic year, please **estimate** the amount of your institution's Perkins basic grant (as reported in line 4a of question 3) spent (and for 1991-1992, planned to be spent) for each of the following. (ENTER AMOUNTS; IF NONE, ENTER "0")

	Uses of your institution's Perkins basic grant	1990-1991 academic year (A)	1991-1992 academic year (B)
1.	To pay salary for new teaching positions	*(N=341)* $ *4,346,000*	*(n=358)* $ *7,212,000*
2.	To pay benefits for new teaching positions	*(n=339)* $ *556,000*	*(n=353)* $ *1,111,000*
3.	To pay salary for existing teaching positions	*(n=346)* $ *17,306,000*	*(n=358)* $ *14,357,000*
4.	To pay benefits for existing teaching positions	*(n=344)* $ *3,369,000*	*(n=357)* $ *2,753,000*
5.	To pay salary for new support positions (counselors, tutors, administrators, etc.)	*(n=346)* $ *40,260,000*	*(n=360)* $ *45,612,000*
6.	To pay benefits for new support positions	*(n=341)* $ *1,953,000*	*(n=349)* $ *3,579,000*
7.	To pay salary for existing support positions	*(n=353)* $ *26,233,000*	*(n=358)* $ *26,919,000*
8.	To pay benefits for existing support positions	*(n=347)* $ *4,973,000*	*(n=355)* $ *5,938,000*
9.	For faculty education/professional development	*(n=342)* $ *2,475,000*	*(n=353)* $ *1,868,000*
10.	For curriculum development	*(n=339)* $ *3,079,000*	*(n=350)* $ *4,277,000*
11.	For instructional supplies	*(n=350)* $ *5,851,000*	*(n=360)* $ *7,438,000*
12.	To purchase new or replacement equipment used specifically to accommodate special populations	*(n=345)* $ *5,501,000*	*(n=354)* $ *12,336,000*
13	To purchase new or replacement equipment for vocational-technical programs	*(n=353)* $ *29,609,000*	*(n=359)* $ *35,132,00*
14.	For institutional development (promotion, marketing, etc.)	*(n=336)* $ *1,297,00*	*(n=348)* $ *1,568,000*
15.	For travel to training, conferences, etc.	*(n=343)* $ *1,435,000*	*(n=349)* $ *1,772,000*
16.	Other (PLEASE SPECIFY)	*(n=251)* $ *18,338,000*	*(n=236)* $ *11,526,000*
17.	TOTAL PERKINS BASIC GRANT ------>	*(n=367)* $ *138,054,000*	*(n=372)* $ *152,475,000*

6. Once again, consider your institution's Perkins basic grant. For (A) the 1990-1991 academic year and (B) the 1991-1992 academic year, please **estimate** the percentage of your institution's Perkins basic grant spent (and for 1991-1992, planned to be spent) for each of the following. (ENTER PERCENTS; IF NONE, ENTER "0")

Uses of your institution's Perkins basic		1990-1991 academic year (A) *(mean)*	1991-1992 academic year (B) *(mean)*
1.	Continue vocational-technical program(s) that existed in the prior year	*(n=330)* *19* %	*(n=335)* *10* %
2.	Improve vocational-technical program(s) that existed in the prior year	*(n=340)* *31* %	*(n=350)* *34* %
3.	Provide new vocational-technical program(s)	*(n=324)* *5* %	*(n=334)* *4* %
4.	Continue special population support services that existed in prior years	*(n=336)* *30* %	*(n=343)* *27* %
5.	Improve special population support services	*(n=334)* *11* %	*(n=347)* *14* %
6.	Provide new support services for special populations	*(n=321)* *5* %	*(n=340)* *12* %
7.	Other (PLEASE SPECIFY)	*(n=117)* *6* %	*(n=132)* *6* %
8.	TOTAL SPENT---------->	100%	100%

7. What principal method did your institution use to allocate funds for programs during the 1991-1992 academic year? (CHECK ONE) *(n=371)*

11% Chose campus site(s) that served a concentration of special populations

67% Chose program(s) that served a concentration of special populations

15% Chose program(s) that needed to serve more special populations

8% Based on other factors (PLEASE SPECIFY)

8. Please indicate in part (A) whether each of the following changes in your institution's vocational-technical programs and services occurred between the 1990-1991 academic year and the 1991-1992 academic year. If "yes" in part (A), check the one column in part (B) that best describes the cause of this change. (CHECK YES OR NO FOR EACH CHANGE; IF YES, CHECK THE ONE COLUMN THAT BEST DESCRIBES THE CAUSE)

Type of change between 1990-1991 and 1991-1992 academic years	Did change occur? (A)		Cause of change (B)			
	No	Yes>	Elimination of set asides in Perkins Act	Change in amount of Perkins funding	Other changes in Perkins legislation	Other Reasons
1. Added program(s) *(n=383)*	*62%*	*38%*	*2%*	*19%*	*2%*	*77%*
2. Added service(s) for special populations *(n=384)*	*34%*	*66%*	*7%*	*39%*	*35%*	*18%*
3. Eliminated program(s) *(n=382)*	*71%*	*29%*	*4%*	*8%*	*7%*	*81%*
4. Eliminated service(s) for special populations *(n=380)*	*91%*	*9%*	*32%*	*39%*	*23%*	*7%*
5. Expanded enrollment in existing program(s) *(n=382)*	*37%*	*63%*	*2%*	*19%*	*9%*	*69%*
6. Expanded content in existing program(s) *(n=377)*	*42%*	*58%*	*3%*	*24%*	*16%*	*55%*
7. Expanded existing service(s) for special populations *(n=381)*	*29%*	*71%*	*5%*	*44%*	*28%*	*22%*
8. Reduced existing program(s) *(n=381)*	*86%*	*14%*	*14%*	*25%*	*2%*	*53%*
9. Reduced existing service(s) for special populations *(n=380)*	*89%*	*11%*	*27%*	*41%*	*14%*	*8%*
10. Used Perkins funding to support programs formerly supported with other funds *(n=379)*	*86%*	*14%*	*10%*	*38%*	*30%*	*18%*
11. Used other funding to support programs formerly supported with Perkins funds *(n=377)*	*58%*	*42%*	*18%*	*28%*	*31%*	*21%*
12. Purchased equipment to accommodate special populations *(n=382)*	*36%*	*64%*	*4%*	*47%*	*24%*	*23%*

8. (continued)

Type of change between 1990-1991 and 1991-1992 academic years	Did change occur? (A) No	Did change occur? (A) Yes>	Cause of change (B) Elimination of set asides in Perkins Act	Cause of change (B) Change in amount of Perkins funding	Cause of change (B) Other changes in Perkins legislation	Cause of change (B) Other Reasons
13. Purchased equipment for any students (not limited to special populations) *(n=381)*	*44%*	*56%*	*6%*	*31%*	*22%*	*40%*
14. Upgraded skills of faculty *(n=380)*	*33%*	*67%*	*6%*	*29%*	*19%*	*46%*
15. Improved curriculum *(n=381)*	*21%*	*79%*	*3%*	*26%*	*22%*	*48%*
16. Other (PLEASE SPECIFY) *(n=18)*	*50%*	*50%*				

Note: The estimates presented in PART B for each item in question 8 were calculated considering only those colleges that answered "yes" to PART A.

9. During the 1990-1991 and 1991-1992 academic years, did your postsecondary institution offer vocational-technical programs (sequenced courses leading to an occupational skill) providing other than a baccalaureate or advanced degree, directly related to the preparation of individuals for paid or unpaid employment? (CHECK ONE) *(n=477)*

   1% Yes, for 1990-1991 academic year only

   1% Yes, for 1991-1992 academic year only

   92% Yes, for both years

   6% No----> GO TO QUESTION 39

10. During the 1990-1991 and 1991-1992 academic years, how many vocational-technical programs (sequenced courses leading to an occupational skill) did your postsecondary institution offer? (ENTER NUMBERS)

    (n=445)
    27 (mean) Programs in the 1990-1991 academic year

    (n=444)
    27 (mean) Programs in the 1991-1992 academic year

11. Consider all of your vocational-technical programs. During the 1990-1991 and 1991-1992 academic years, to how many of these programs did you allocate any of your Perkins basic grant? (ENTER NUMBER OF PROGRAMS; IN NONE, ENTER "0")

    (n=439)
    11 (mean) Programs in 1990-1991 academic year

    (n=443)
    9 (mean) Programs in 1991-1992 academic year

QUALITY MEASURES AND STANDARDS

12. Institutions might have measures of quality for one or more of their vocational-technical programs and have standards associated with those measures that are to be met by the programs. For example, a quality measure might be the placement rate of students who have completed the program, while the standard that the institution might use for that measure is a specified percentage of the program completers that should be placed.

Listed below are items that could be considered measures of quality in vocational-technical programs. Please indicate whether or not your institution used (or will use in 1991-1992) each measure to assess any vocational-technical programs in (A) the 1990-1991 and (C) the 1991-1992 academic years, and whether or not your institution had a standard associated with each measure in (B) 1990-1991 and (D) 1991-1992. (CHECK "YES" OR "NO" FOR EACH MEASURE AND STANDARD ASSOCIATED WITH THAT MEASURE)

Possible quality measures	Used in a 90-91 self-assessment? (A)		Was there a standard in 1990-1991? (B)		Used in a 91-92 self-assessment? (C)		Was there a standard in 1991-1992? (D)	
	No	Yes-->	No	Yes	No	Yes-->	No	Yes
1. Placement rates (employment, military service, or additional training/education)	*(n=436) 24%*	*76%*	*(n=347) 54%*	*46%*	*(n=431) 20%*	*80%*	*(n=354) 46%*	*54%*
2. Program completion or graduation rates	*(n=435) 17%*	*83%*	*(n=366) 54%*	*46%*	*(n=429) 13%*	*87%*	*(n=376) 48%*	*52%*
3. Program retention rates	*(n=429) 31%*	*69%*	*(n=299) 59%*	*41%*	*(n=423) 26%*	*74%*	*(n=320) 53%*	*47%*
4. Starting salary of those who complete a program	*(n=435) 51%*	*49%*	*(n=225) 76%*	*24%*	*(n=429) 48%*	*52%*	*(n=236) 72%*	*28%*
5. Increase in wages over 1-year period	*(n=432) 95%*	*5%*	*(n=44) 86%*	*14%*	*(n=425) 95%*	*5%*	*(n=49) 82%*	*18%*
6. Length of time to gain employment after program completion	*(n=434) 82%*	*18%*	*(n=99) 69%*	*31%*	*(n=430) 81%*	*19%*	*(n=103) 68%*	*32%*
7. Pretest-posttest for occupational competency gains	*(n=432) 81%*	*19%*	*(n=103) 45%*	*55%*	*(n=426) 78%*	*22%*	*(n=116) 40%*	*60%*
8. Pretest-posttest for academic competency gains	*(n=432) 70%*	*30%*	*(n=148) 36%*	*64%*	*(n=426) 65%*	*35%*	*(n=167) 31%*	*69%*
9. Percent of vocational-technical students going to 4-year institutions	*(n=431) 64%*	*36%*	*(n=169) 79%*	*21%*	*(n=419) 61%*	*39%*	*(n=181) 72%*	*28%*
10. Results of state licensing exams	*(n=434) 24%*	*76%*	*(n=327) 40%*	*60%*	*(n=428) 24%*	*76%*	*(n=332) 36%*	*64%*
11. Employer satisfaction with those who complete a program	*(n=437) 34%*	*66%*	*(n=293) 61%*	*39%*	*(n=431) 32%*	*68%*	*(n=300) 57%*	*43%*
12. Student satisfaction with vocational-technical education received	*(n=438) 23%*	*77%*	*(n=337) 61%*	*39%*	*(n=429) 20%*	*80%*	*(n=346) 57%*	*43%*
13. Other (PLEASE SPECIFY) _____	*(n=36) 8%*	*92%*	*(n=34) 53%*	*47%*	*(n=34) 0%*	*100%*	*(n=35) 49%*	*51%*

13. For the 1990-1991 and 1991-1992 academic years, for about how many vocational-technical programs did your institution apply a standard to assess the quality of that program? (ENTER NUMBER; ENTER "0" IF NONE)

(n=442)	
11 (mean)	Vocational-technical programs had standards for the 1990-1991 academic year
(n=442)	
12 (mean)	Vocational-technical programs had standards for the 1991-1992 academic year

14. For the 1990-1991 and 1991-1992 academic years, for about how many vocational-technical programs that were allocated any of your Perkins basic grant did your institution apply a standard? (ENTER NUMBER; ENTER "0" IF NONE)

(n=440)	
5 (mean)	Perkins-funded vocational-technical programs had standards for the 1990-1991 academic year
(n=441)	
5 (mean)	Perkins-funded vocational-technical programs had standards for the 1991-1992 academic year

RECRUITING SPECIAL POPULATIONS

15. In the 1990-1991 and 1991-1992 academic years, did your institution target recruitment efforts for vocational-technical programs specifically toward members of special populations? (CHECK ONE) ***(n=447)***

1%	Yes, for the 1990-1991 academic year only
8%	Yes, for the 1991-1992 academic year only
77%	Yes, for both years
14%	No, for neither year ---> GO TO 17

16. In the 1990-1991 and 1991-1992 academic years, where and how did representatives of your institution attempt to recruit special population students? (CHECK ALL THAT APPLY) ***(n=385)***

	1990-91	1991-92
1. Area comprehensive high school	***86%***	***91%***
2. Special schools for students at risk	***34%***	***38%***
3. Special schools for students with disabilities	***25%***	***28%***
4. Area vocational technical institutions	***43%***	***47%***
5. Social service agencies	***72%***	***78%***
6. Vocational rehabilitation agencies	***68%***	***72%***
7. Community-based organizations	***70%***	***73%***
8. Religious organizations	***24%***	***27%***
9. JTPA program	***72%***	***76%***
10. College fair	***76%***	***79%***
11. Through print, radio, TV, and other media advertising	***79%***	***83%***
12. Other (SPECIFY)	***15%***	***16%***

POST-COMPLETION PLACEMENT INFORMATION

17. Does your institution have any placement information on students who have completed their programs of study? Completers are those receiving degree, certificate, diploma, or other formal recognition of completion. (CHECK ONE) ***(n=444)***

72% Yes

28% No ---> GO TO QUESTION 22

18. What is the most recent completing class for which you have post-graduation/ completion employment or education information? (ENTER YEAR) ***(n=315)***

Completing class of 1991 (mode) (range 1985-92)

19. As of what date do you have this information on the completing class noted in question 18? (ENTER DATE) ***(n=314)***

05/92 (mode) (range 11/85-12/92)

20. Consider the students in the most recent class of completers for which you collected information. Please estimate (A) the number of these completers who were doing each of the following and (B) the number of these completers in each case who were vocational-technical students. (ENTER NUMBERS; ENTER "0" IF NONE)

		Total number of completers (A)	Number of vocational-technical completers (B)
1.	Were in a 4-year college	***(n=263)*** ***26,463***	***(n=288)*** ***7,759***
2.	Were in another program at this institution	***(n=249)*** ***10,559***	***(n=272)*** ***7,062***
3.	Were working in the area of training	***(n=267)*** ***44,005***	***(n=302)*** ***50,001***
4.	Were working outside the area of training	***(n=261)*** ***10,028***	***(n=295)*** ***8,212***
5.	Were working but job relationship to training unknown	***(n=235)*** ***4,168***	***(n=261)*** ***3,439***
6.	Were in the military	***(n=241)*** ***862***	***(n=269)*** ***576***
7.	Were unemployed	***(n=262)*** ***6,114***	***(n=290)*** ***5,783***
8.	Status was unknown at the time (including those that did not respond)	***(n=268)*** ***29,880***	***(n=293)*** ***18,390***
9.	TOTAL	***(n=276)*** ***128,793***	***(n=299)*** ***118,350***

Note: Because of low response rates, numbers presented for question 20 are not national estimates. They refer to only those colleges that responded to each item in this question.

21. Is completer placement information readily available for vocational-technical students who are members of the following special populations? (CHECK "YES" OR "NO" FOR EACH SPECIAL POPULATION)

YES	NO	
55%	*45%*	Disabled *(n=318)*
58%	*42%*	Economically disadvantaged (Pell grant recipients) *(n=318)*
45%	*55%*	Limited English proficient (LEP) *(n=312)*

COMPETENCY-BASED PROGRAMS

22. Competency-based programs are those that have a minimum set of occupational "competencies" or "standards," formally incorporated into the curriculum, that are beyond standard course requirements, and that students must master in order to complete the program in which they are enrolled. Consider only vocational-technical programs at this institution in the 1990-1991 and 1991-1992 academic years. Were any of these programs competency-based? (CHECK ONE) *(n=443)*

- *1%* Yes, programs in the 1990-1991 academic year only
- *3%* Yes, programs in the 1991-1992 academic year only
- *64%* Yes, programs in both years
- *32%* No, programs in neither year----> GO TO QUESTION 26

23. Consider only the vocational-technical programs at this institution in the 1990-1991 and 1991-1992 academic years. Please enter the total number of programs that were competency-based during the (A) 1990-1991 and (B) 1991-1992 academic years, and the number of these competency-based programs, if any, that were at least partially Perkins-funded. (ENTER NUMBER FOR EACH YEAR; IF NONE, ENTER "0")

		1990-1991 Academic year (A)	1991-1992 Academic year (B)
1.	Total number of competency-based programs	*(n=311)* *14 (mean)*	*(n=310)* *14 (mean)*
2.	Number of Perkins-funded competency-based programs	*(n=307)* *6 (mean)*	*(n=306)* *6 (mean)*

24. Please enter the number of your institution's vocational-technical programs, if any, that used competency-based standards derived from each of the following sources for (A) the 1990-1991 academic year, and (B) the 1991-1992 academic year. (ENTER NUMBER; IF NONE, ENTER "0")

	Source of competency standard	Number of programs with competency-based standards in 1990-1991 (A) *(mean)*	Number of programs with competency-based standards in 1991-1992 (B) *(mean)*
1.	Federal licensing requirements (Federal Aviation Administration, etc.)	*(n=262)* *<1*	*(n=263)* *<1*
2.	National trade, industrial, health, or professional organization	*(n=282)* *3*	*(n=284)* *3*
3.	Regional accrediting organization	*(n=263)* *5*	*(n=263)* *5*
4.	State licensing requirements	*(n=294)* *3*	*(n=295)* *3*
5.	State-wide trade, industrial, health, or professional organization	*(n=265)* *2*	*(n=268)* *2*
6.	State government	*(n=254)* *4*	*(n=255)* *4*
7.	Local business or industry	*(n=260)* *5*	*(n=262)* *5*
8.	This institution alone	*(n=259)* *4*	*(n=260)* *5*
9.	Other (PLEASE SPECIFY)	*(n=40)* *4*	*(n=40)* *5*

25. For the (A) 1990-1991 and (B) 1991-1992 academic years, please enter the number of vocational-technical programs if any, that, apart from an associate degree or a certificate of completion, issued competency certificates to students which listed the specific occupational skills that students mastered. Also enter the number of these programs, if any, that were at least partially Perkins-funded. (ENTER NUMBER FOR EACH YEAR; IF NONE, ENTER "0")

		1990-1991 Academic year (A)	1991-1992 Academic year (B)
1.	Total number of programs with competency certificates	*(n=310)* *3 (mean)*	*(n=310)* *3 (mean)*
2.	Number of Perkins-funded programs with competency certificates	*(n=310)* *2 (mean)*	*(n=310)* *2(mean)*

26. For the 1990-1991 and 1991-1992 academic years, did this institution offer to retrain, at its own expense, any graduates/completers that did not have the minimum skills needed to perform the work for which they were trained? (CHECK ONE) *(n=438)*

<1% Yes, for the 1990-1991 academic year only

2% Yes, for the 1991-1992 academic year only

11% Yes, for both years

87% No, for neither year

27. Listed below are ways that community organizations, businesses, agencies, or groups can help vocational-technical programs. For the 1990-1991 academic year, (A) please indicate if any organizations made each type of contribution and, if yes, (B) the extent of each type of contribution that these organizations made to vocational-technical programs. (FOR COLUMN A, CHECK "YES" OR "NO"; FOR COLUMN B, CHECK ONE BOX)

	Contribution made? (A)		Extent of contribution by organizations (B)				
Contribution	No	Yes>	Very great extent	Great extent	Moderate extent	Some extent	Little extent
1. Faculty worked at local industry for their professional development *(n=439)*	*38%*	*62%*	*4%*	*18%*	*39%*	*32%*	*7%*
2. Industry people taught in the institution *(n=443)*	*18%*	*82%*	*13%*	*30%*	*34%*	*19%*	*4%*
3. Helped develop/modify curriculum *(n=444)*	*8%*	*92%*	*16%*	*33%*	*34%*	*14%*	*2%*
4. Advised students on skills needed in work-place *(n=440)*	*16%*	*84%*	*8%*	*25%*	*38%*	*24%*	*5%*
5. Donated money to a vocational-technical program *(n=440)*	*41%*	*59%*	*5%*	*14%*	*31%*	*31%*	*19%*
6. Donated material, supplies, or equipment to a vocational-technical program *(n=443)*	*13%*	*87%*	*6%*	*18%*	*37%*	*27%*	*12%*
7. Provided work-study/cooperative education/apprenticeship positions *(n=442)*	*14%*	*86%*	*15%*	*26%*	*36%*	*18%*	*5%*
8. Made facilities available to other than cooperative education students *(n=442)*	*40%*	*60%*	*5%*	*15%*	*30%*	*34%*	*16%*
9. Evaluated students for competency attainment *(n=441)*	*56%*	*44%*	*9%*	*16%*	*31%*	*34%*	*10%*
10. Helped develop competency standards *(n=441)*	*35%*	*64%*	*10%*	*28%*	*31%*	*24%*	*8%*
11. Assessed vocational-technical program quality *(n=444)*	*17%*	*83%*	*11%*	*25%*	*36%*	*24%*	*4%*
12. Other (PLEASE SPECIFY) *(n=22)*	*23%*	*77%*	*47%*	*18%*	*24%*	*12%*	-

Note: The estimates presented in PART B for each item in question 27 were calculated considering only those colleges that answered "yes" to PART A.

28. Compared to the 1990-91 academic year, in general did organizations contribute more, about as much, or less in the 1991-92 academic year? (CHECK ONE) *(n=444)*

6% Much more in 1991-92 than in 1990-91

26% Somewhat more in 1991-92 than in 1990-91

65% About as much in 1991-92 as in 1990-91

2% Somewhat less in 1991-92 than in 1990-91

1% Much less in 1991-92 than in 1990-91

1% N/A - institution didn't have vocational-technical programs in both years

29. Listed below are support services that might be offered to vocational-technical special population students. For each service, please indicate (A) whether, during the 1990-1991 academic year, it was not available, available but not used, or available and used by special population students at your institution, and (B) for the students who needed each service, the extent to which their needs were met. (ANSWER ONE FOR (A) AND ONE FOR (B))

Support services	Service availability to special populations in the 1990-1991 academic year (A)			For the special population students who needed each service, to what extent were their needs met in the 1990-1991 academic year? (B)			
	Not available	Available but not used	Available and used	Very great or great extent	Moderate extent	Some or little extent	N/A - not needed
1. Curriculum/course modification for students with disabilities *(n=435/379)*	*18%*	*18%*	*63%*	*19%*	*31%*	*26%*	*25%*
2. Testing/assessment *(n=444/430)*	*4%*	*2%*	*94%*	*57%*	*31%*	*10%*	*2%*
3. Remediation of basic academic skills *(n=444/434)*	*3%*	*2%*	*96%*	*69%*	*26%*	*4%*	*1%*
4. Instructional aides *(n=440/397)*	*15%*	*5%*	*80%*	*39%*	*37%*	*15%*	*9%*
5. Tutoring *(n=445/428)*	*4%*	*2%*	*94%*	*56%*	*33%*	*9%*	*2%*
6. English as second language courses *(n=441/353)*	*36%*	*11%*	*53%*	*31%*	*20%*	*18%*	*31%*
7. Interpreter service for the hearing impaired *(n=442/353)*	*28%*	*22%*	*50%*	*26%*	*17%*	*21%*	*35%*
8. Reader for vision impaired *(n=440/357)*	*28%*	*21%*	*51%*	*25%*	*19%*	*22%*	*35%*
9. Personal care attendant *(n=438/297)*	*73%*	*11%*	*16%*	*7%*	*7%*	*14%*	*71%*
10. Special/modified equipment to accommodate disabilities *(n=440/383)*	*22%*	*10%*	*68%*	*20%*	*30%*	*30%*	*21%*
11. Removal of physical barriers *(n=440/405)*	*7%*	*14%*	*79%*	*36%*	*31%*	*18%*	*15%*

29. (continued)

Support services	Service availability to special populations in the 1990-1991 academic year (A)			For the special population students who needed each service, to what extent were their needs met in the 1990-1991 academic year? (B)			
	Not available	Available but not used	Available and used	Very great or great extent	Moderate extent	Some or little extent	N/A - not needed
12. Transportation services for students with disabilities *(n=442/305)*	*62%*	*7%*	*31%*	*13%*	*22%*	*17%*	*49%*
13. Liaison with social service agencies *(n=443/413)*	*6%*	*4%*	*90%*	*48%*	*35%*	*12%*	*4%*
14. Day care for children of students *(n=442/353)*	*40%*	*2%*	*58%*	*35%*	*27%*	*18%*	*20%*
15. Other (PLEASE SPECIFY) *(n=30/28)* _____	*13%*	-	*87%*	*71%*	*14%*	*7%*	*7%*

30. Compared to the 1990-91 academic year, in general were you able to provide support services to more, about as many, or fewer of the special population students who needed them in the 1991-92 academic year? (CHECK ONE) *(n=441)*

12% Far more in 1991-92 than in 1990-91

42% Somewhat more in 1991-92 than in 1990-91

37% About as many in 1991-92 as in 1990-91

6% Somewhat fewer in 1991-92 than in 1990-91

2% Far fewer in 1991-92 than in 1990-91

1% N/A - institution didn't have vocational-technical programs in both years

31. Listed below are job placement services that might be offered to vocational-technical special population students. For each service, please indicate (A) whether, during the 1990-1991 academic year, it was not available, available but not used, or available and used by special population students at your institution and (B) for the special population students who needed each service, the extent to which their needs were met. (ANSWER ONE FOR (A) AND ONE FOR (B))

Job placement services	Service availability to special populations in the 1990-1991 academic year (A)			For the special population students who needed each service, to what extent were their needs met in the 1990-1991 academic year? (B)			
	Not available	Available but not used	Available and used	Very great or great extent	Moderate extent	Some or little extent	N/A - not needed
1. Career counseling *(n=445/429)*	*2%*	*1%*	*97%*	*48%*	*41%*	*10%*	*1%*
2. Career assessment *(n=443/412)*	*8%*	*3%*	*89%*	*43%*	*40%*	*14%*	*3%*
3. Career exploration *(n=444/411)*	*8%*	*3%*	*89%*	*43%*	*37%*	*18%*	*3%*
4. Mock job interviewing *(n=439/374)*	*21%*	*7%*	*72%*	*24%*	*35%*	*28%*	*13%*
5. Job list or bank *(n=444/404)*	*10%*	*2%*	*89%*	*39%*	*42%*	*16%*	*3%*
6. Job development *(n=441/361)*	*35%*	*3%*	*62%*	*22%*	*36%*	*20%*	*22%*
7. Job coaching *(n=443/331)*	*47%*	*4%*	*50%*	*18%*	*26%*	*27%*	*29%*
8. Job mentoring *(n=441/294)*	*63%*	*5%*	*33%*	*10%*	*17%*	*30%*	*44%*
9. Job support groups *(n=437/276)*	*72%*	*5%*	*23%*	*9%*	*16%*	*22%*	*54%*
10. Interview scheduling *(n=442/353)*	*32%*	*3%*	*65%*	*28%*	*36%*	*21%*	*15%*
11. Transportation to interviews *(n=437/256)*	*84%*	*4%*	*12%*	*4%*	*9%*	*16%*	*72%*
12. Preparation of resumes *(n=444/409)*	*9%*	*3%*	*89%*	*46%*	*34%*	*16%*	*4%*
13. Other (PLEASE SPECIFY) *(n=21/17)*	*14%*	-	*86%*	*59%*	*35%*	*6%*	-

32. Compared to the 1990-91 academic year, in general were you able to provide job placement services to more, about as many, or fewer of the special population students who needed them in the 1991-92 academic year? (CHECK ONE) *(n=442)*

11% Far more in 1991-92 than in 1990-91

31% Somewhat more in 1991-92 than in 1990-91

52% About as many in 1991-92 as in 1990-91

3% Somewhat fewer in 1991-92 than in 1990-91

3% Far fewer in 1991-92 than in 1990-91

1% N/A - institution didn't have vocational-technical programs in both years

33. During the 1990-1991 academic year, to what extent, if any, did programs in your institution use each of the following methods to integrate academic and vocational-technical education? (CHECK THE APPROPRIATE BOX FOR EACH METHOD)

		The extent to which programs used the following methods during the 1990-1991 academic year				
	Methods	Very great extent	Great extent	Moderate extent	Some extent	Little or no extent
1.	Academic skills were taught in required academic classes *(n=445)*	*61%*	*25%*	*8%*	*3%*	*3%*
2.	Academic curricula formally incorporated occupational concepts (writing assignments focused on occupational topics, etc.) *(n=443)*	*13%*	*20%*	*31%*	*25%*	*12%*
3.	Academic skills instruction was formally incorporated into vocational-technical class curricula *(n=446)*	*17%*	*22%*	*27%*	*24%*	*10%*
4.	Special academic classes were designed specifically for vocational-technical programs (math for electronics students, etc.) *(n=445)*	*12%*	*18%*	*22%*	*23%*	*25%*
5.	Academic and vocational-technical faculty taught in teams *(n=443)*	*5%*	*3%*	*10%*	*20%*	*64%*
6.	Other methods of teaching academic skills to vocational-technical students (PLEASE SPECIFY) *(n=68)* _____ _____	*25%*	*16%*	*22%*	*12%*	*25%*

34. Compared to the 1990-91 academic year, in general did your institution do more, about as much or less to integrate academic instruction and vocational-technical education during the 1991-92 academic year? (CHECK ONE) *(n=446)*

7% Much more in 1991-92 than in 1990-91

37% Somewhat more in 1991-92 than in 1990-91

54% About as much in 1991-92 as in 1990-91

1% Somewhat less in 1991-92 than in 1990-91

0% Much less in 1991-92 than in 1990-91

<1% N/A - institution didn't have vocational-technical programs in both years

35. Listed below are various categories of tech-prep programs. Enter the number of each that your institution had in the (A) 1990-1991 and (B) 1991-1992 academic years. (ENTER NUMBERS; IF NONE, ENTER "0")

		1990-1991 Academic year (A) *(mean)*	1991-1992 Academic year (B) *(mean)*
1.	Total number of tech-prep programs	*(n=435)* *1*	*(n=437)* *2*
2.	Total number of tech-prep programs that were being developed	*(n=433)* *1*	*(n=430)* *2*
3.	Number of tech-prep programs at least partially Perkins-funded	*(n=429)* *1*	*(n=431)* *1*
4.	Number of tech-prep programs at least partially Perkins-funded that were being developed	*(n=429)* *<1*	*(n=428)* *1*

36. Please indicate if your institution received a Perkins competitive grant for tech-prep programs for either the 1990-1991 or 1991-1992 academic years, and if so, enter the amount of the grant. (CHECK ONE FOR EACH AND ENTER AMOUNTS; IN NONE, ENTER "0")

	NO	YES	
1. 1990-1991 academic year	*(n=443)* *93%*	*7%*	*(n=428)* -----> enter amount *$ 2,509,060*
2. 1991-1992 academic year	*(n=441)* *65%*	*35%*	*(n=430)* -----> enter amount *$28,053,788*

37. Listed below are credentials or qualifications that vocational-technical faculty might have. For (A) the 1990-1991 and (B) the 1991-1992 academic years, please **estimate** the number of vocational-technical faculty in your institution with each credential/qualification. (ENTER THE NUMBER OF FACULTY FOR EACH)

	Types of credential/qualifications	Number of vocational-technical faculty with each in 1990-1991 (A) *(mean)*	Number of vocational-technical faculty with each in 1991-1992 (B) *(mean)*
1.	Vocational-technical teaching certificate for specific field	*(n=353)* *23*	*(n=353)* *23*
2.	Professional license or certification	*(n=396)* *17*	*(n=396)* *17*
3.	Continuing education credits for vocational-technical faculty in any education area	*(n=333)* *17*	*(n=331)* *18*
4.	Continuing education credits for vocational-technical faculty in their technical field	*(n=337)* *17*	*(n=338)* *17*
5.	Continuing exposure to related industry or field of expertise	*(n=378)* *29*	*(n=378)* *30*

38. Listed below are degrees that vocational-technical faculty might have. For (A) the 1990-1991 and (B) the 1991-1992 academic years, please **estimate** the number of vocational-technical faculty in your institution with each as their highest level of education. (ENTER NUMBER OF FACULTY FOR EACH; IF NONE, ENTER "0")

	Highest level of education	Number of vocational-technical faculty with each in this institution in 1990-1991 (A) *(mean)*	Number of vocational-technical faculty with each in this institution in 1991-1992 (B) *(mean)*
1.	High school diploma/GED certificate	*(n=399)* *4*	*(n=399)* *4*
2.	AA/AS degree	*(n=415)* *5*	*(n=418)* *5*
3.	BA/BS degree	*(n=434)* *13*	*(n=434)* *13*
4.	MA/MS degree	*(n=433)* *25*	*(n=435)* *25*
5.	PhD or EdD degree	*(n=399)* *3*	*(n=403)* *3*
6.	Other (PLEASE SPECIFY) _____ _	*(n=149)* *3*	*(n=150)* *4*
7.	TOTAL NUMBER OF VOCATIONAL-TECHNICAL FACULTY ---------->	*(n=435)* *49*	*(n=437)* *50*

STUDENTS IN THIS INSTITUTION

39. Consider the students in your institution who were taking courses for credit during the fall semester of the 1990-1991 and 1991-1992 academic years. Please enter the total number of full time and part time students and, of these, the number in vocational-technical programs during each fall semester. (ENTER NUMBER IN EACH CATEGORY; IF NONE, ENTER "0")

	Fall 1990 enrollment		Fall 1991 enrollment	
	Total	Vocational-technical	Total	Vocational-technical
All students	*(n=443)* *4,316,956*	*(n=440)* *1,842,458*	*(n=443)* *4,486,118*	*(n=438)* *1,920,244*

40. About what percentage of the vocational-technical students during the 1990-1991 and 1991-1992 academic years were part time? (ENTER PERCENTAGE)

(n=420)
49% (mean) of the vocational-technical students in the 1990-1991 academic year were part time

(n=421)
49% (mean) of the vocational-technical students in the 1991-1992 academic year were part time

41. Consider the special population students--that is, students with disabilities, Pell grant recipients, and students with limited English proficiency (LEP)--in your institution who were taking courses for credit during the fall semester of the 1990-1991 and 1991-1992 academic years. Please enter the total number of full time and part time students in each special population listed below and, of these, the number in vocational-technical programs during each fall semester. Double count where appropriate. (ENTER NUMBER IN EACH CATEGORY; IF NONE, ENTER "0")

		Fall 1990 enrollment		Fall 1991 Enrollment	
		Total	Vocational-technical	Total	Vocational-technical
1.	Students with disabilities	*(n=394)* *135,504*	*(n=390)* *68,888*	*(n=396)* *144,878*	*(n=390)* *75,594*
2.	Students who receive a Pell grant	*(n=417)* *634,230*	*(n=396)* *311,880*	*(n=415)* *709,894*	*(n=402)* *358,832*
3.	LEP students	*(n=376)* *274,518*	*(n=375)* *79,916*	*(n=376)* *300,824*	*(n=374)* *99,720*

42. Consider the full time and part time students in your institution during the fall semester of the 1990-1991 and 1991-1992 academic years who were not members of any of the special populations listed above. Please enter the total number of these students (both full time and part time), and the number who were in vocational-technical programs during each fall semester. (ENTER NUMBER IN EACH CATEGORY; IF NONE, ENTER "0")

	Fall 1990 enrollment		Fall 1991 enrollment	
	Total	Vocational-technical	Total	Vocational-technical
Students who were not members of any special population	*(n=405)* *2,887,016*	*(n=393)* *1,200,118*	*(n=404)* *2,931,178*	*(n=390)* *1,216,608*

43. We would like to know how you learned about students who belong to special populations during the 1990-1991 academic year. Please estimate the percentage of (A) students with disabilities and (B) limited English proficient (LEP) students who were identified in each of the following ways. (ENTER PERCENTAGE ESTIMATES FOR EACH SPECIAL POPULATION; COLUMNS SHOULD ADD TO 100%)

		Students with disabilities (A) *(mean)*	LEP students (B) *(mean)*
1.	They volunteered this information on the application form	*(n=381)* *31%*	*(n=277)* *30%*
2.	They were identified through requests for services	*(n=387)* *35%*	*(n=272)* *22%*
3.	They were identified by faculty	*(n=372)* *8%*	*(n=270)* *10%*
4.	They were identified from high school records	*(n=364)* *4%*	*(n=261)* *2%*
5.	They were identified through assessment, evaluation, or testing of students	*(n=377)* *20%*	*(n=276)* *31%*
6.	Other (PLEASE SPECIFY)	*(n=146)* *21%*	*(n=100)* *17%*
7.	TOTAL ------>	100%	100%

44. In your opinion, what significant (1) positive and (2) negative effects, if any, have the Perkins Act amendments of 1990 had on your institution? (WRITE IN BELOW)

(1) POSITIVE EFFECTS: *(n=299)*

(2) NEGATIVE EFFECTS: *(n=244)*

45. In your opinion, what specific provisions of the Perkins Act, if any, should be modified? (WRITE IN BELOW) *(n=209)*

46. Thank you for taking part in this survey. If you wish to add any comments about this questionnaire or about vocational-technical education, please write them below. *(n=108)*

GLOSSARY

Disadvantaged: Individuals (other than individuals with disabilities) who have economic or academic disadvantages and who require special services and assistance to succeed in vocational-technical education programs.

Disabled: Individuals who are mentally retarded, hard of hearing, deaf, speech impaired, visually impaired, seriously disturbed, orthopedically impaired, other health impaired, deaf-blind, or have multiple disabilities, or specific learning disabilities, who because of these impairments, need special education and related services and cannot succeed in the regular vocational-technical program without special education assistance.

Limited English proficient: Individuals who were not born in the United States or whose native language is other than English; who come from environments where a language other than English is dominant or had a significant impact on their level of English language proficiency; and as a result, have sufficient difficulty speaking, reading, writing, or understanding the English language to deny the opportunity to learn successfully in classrooms where English is the language used for instruction.

Special populations: Includes individuals with disabilities, disadvantaged individuals, and individuals of limited English proficiency.

Vocational-technical education: Organized educational programs offering a sequence of courses that are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree. For example, a program in technical drafting might consist of a sequence of courses, such as fundamentals of drafting and design, technical illustration/rendering, electrical-electronic drafting, technical drafting I and II, hydraulics and pneumatics, and machine shop practices I and II.

Postcompletion Placement Results Reported by Colleges: Total Completers and Vocational Program Completers

Postcompletion status	All completers (number/percent)	Vocational completers (number/percent)
4-year college	26,463 (20%)	7,759 (7%)
Another program at same college	10,559 (8%)	7,062 (6%)
Working in area of training	44,005 (34%)	50,001 (42%)
Working outside area of training	10,028 (8%)	8,212 (7%)
Working but relation to training unknown	4,168 (3%)	3,439 (3%)
Military	862 (1%)	576 (-)
Unemployed	6,114 (5%)	5,783 (5%)
Status unknown	26,594 (21%)	35,518 (30%)
Total	**128,793 (100%)**	**118,350 (100%)**

Note: Data are for reporting colleges only and are not representative of the universe of 2-year postsecondary institutions. Colleges reported totals that did not agree with the sum of the line item responses; we have adjusted "status unknown" to account for the difference between the sum of the outcomes reported and the total reported in both columns.

Comments From the Department of Education

UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF VOCATIONAL AND ADULT EDUCATION

MAY 21 1993

Dr. Linda G. Morra
Director, Education and Employment Issues
Human Resources Division
United States General Accounting Office
Washington, DC 20548

Dear Dr. Morra:

The Secretary has asked me to respond to your letter, dated April 21, 1993, requesting a review of the draft report entitled Postsecondary Vocational Education: Status in 1990-91, and Early Signs of Change (GAO/HRD-93-89). Enclosed are our comments on the draft report.

The Department has focused its comments primarily on the following three most critical areas:

- The composition of the sample group and the extent to which the findings represent post-high school vocational education programs in the United States;
- Appropriate use of enrollment and placement data; and
- Interpretation of the Carl D. Perkins Vocational and Applied Technology Education Act and clarification of definitions and findings.

If you have any questions, please contact Dr. Winifred I. Warnat, Director, Division of Vocational-Technical Education, at 205-9441.

Sincerely,

Ricky Takai

Ricky Takai
Acting Assistant Secretary

Enclosure

400 MARYLAND AVE., S.W. WASHINGTON, D.C. 20202

Our mission is to ensure equal access to education and to promote educational excellence throughout the Nation.

U.S. Department of Education Response to GAO Draft Report, "Postsecondary Vocational Education: Status in 1990-91 and Early Signs of Change" (GAO/HRD-93-89)

1. **Composition of the Sample**

As stated, the objectives of the study are to identify the status of postsecondary vocational education and the effects of the 1990 amendments made to Title II of the Carl D. Perkins Vocational and Applied Technology Education Act (the Act). Given the composition of the sample (public and private, non-profit 2-year institutions), the Department questions the extent to which the findings represent accurately post-high school vocational education programs in the United States. Community colleges comprised only 14.0 - 17.6 percent of all institutions, public and private, nonprofit, providing postsecondary vocational education in 1988-89.[1] In that year, less than half of all 18-34 year olds enrolled in vocational education courses were taking courses provided by public 2-year colleges. Over 2.3 million students, ages 18-34, were taking vocational courses from other providers.[2]

Recommendation:

The Department recommends that a statement be included in the letter and the report that emphasizes that the study is not representative of all postsecondary vocational education and that stresses that conclusions cannot be drawn for all of postsecondary vocational education based upon the data derived from this limited survey sample. The Department further recommends that the report identify the various

[1] National Center for Education Statistics, Vocational Education in the United States: 1969-1990 (Washington, D.C.: GPO, April 1992), p. 71, and U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System.

[2] National Center for Education Statistics, Vocational Education in the United States: 1969-1990 (Washington, D.C.: GPO, April 1992), p. 75, and U.S. Department of Commerce, Bureau of the Census, Current Population Survey, School Enrollment Supplement: October 1990.

types of vocational education providers and their "market share." For additional clarity, and as the study is limited to 2-year colleges, the Department recommends that the title of Figure II.2 be amended to read: "Estimated Composition of 2-Year Postsecondary Institutions Offering Vocational Programs (academic year 1990-91)."

2. **Performance Standards and Measures**

The report correctly indicates that the Act requires States to develop and implement systems of performance standards and measures by September 1992 and that vocational programs are to be evaluated annually against the measures and standards. However, it is the responsibility of the local recipient, not the State, to conduct program evaluations based upon the State-developed system of performance measures and standards. In addition, data on the integration of academic and vocational education and the development of linkages between secondary and postsecondary institutions are not required in the systems of performance standards and measures that the States are required to develop. Section 115(b) of the Act describes what States are to include in their system of performance standards and measures. They are to include:

-- measures of learning and competency gains, including progress in basic/advanced academic skills;

-- one or more measures of performance, which shall include only --

  - o competency attainment;
  - o job or work skill attainment;
  - o retention or completion of secondary school; and
  - o placement in further education, the military, or employment;

-- incentives or adjustments for special populations; and

-- procedures utilizing existing resources/methods from other programs receiving Federal assistance.

The standards established by the States for each of their measures of performance will be used to assess the level of program quality in these systems.

Recommendation:

For additional clarity, the Department recommends the following modifications to sentences 2 and 3 on page 5 of the letter:

> The Act also required, by September 1992, development and implementation of statewide systems of performance measures and standards against which local grant recipients are to evaluate program effectiveness beginning with the 1992-1993 school year.
>
> and
>
> The systems developed are to include at least one measure of learning and competency gains and at least one measure of student performance, such as competency attainment, as well as standards that are to be used to assess program quality (see section 115(b)).

3. **Service to Target Groups**

The study utilizes enrollment data to reflect the status and effect of institutions' "efforts to serve" target group populations. The Department believes that it is inaccurate to use enrollment rates as a measure of institutions' "efforts to serve" targeted groups because, while an increase in enrollment is the anticipated result of effort, enrollment cannot be assumed to be directly proportionate to "effort."

Recommendation:

The Department recommends that GAO measure the scope and extent of those activities and initiatives that represent actual "effort." This might include time and/or money spent to recruit targeted group students, resource materials and adaptive equipment developed for special population students, and the types and/or magnitude of special services (e.g., tutoring) available to target groups. In the alternative, the Department recommends that a statement be included in the report that emphasizes that enrollment rates are not necessarily an accurate measure of institutions' efforts to serve targeted groups.

4. **Target Group Enrollment**

The study compares the rates of enrollment of target group students with the rates of enrollment of non-target group students to evaluate the progress which these groups have

made in accessing vocational education. The Department believes that a more precise analysis of target group participation is obtained by measuring the enrollment of each relevant group over time. Accurate gain or loss in rate is then comparable longitudinally for each group. Using the data in the GAO report, we find that though Limited English Proficient (LEP) students participated at rates less than the non-targeted group's rate in 1990 and 1991, their participation as compared with the LEP student population increased four percent between 1990 and 1991 (See Attachment III, Summary Response to Survey Questions, No. 41). This increase in participation from 1990 to 1991 is also true for students with disabilities and for disadvantaged students (Same as above). These data indicate, to us, significant progress and not, as the draft report indicates, little change over the two-year period.

Recommendation:

The Department recommends that the analysis of target group participation be based on changes in the enrollment of each group over time.

5. **Funding Allocations**

The Department believes that the analysis of "allocation of funds" and "concentration of funds" within the section Little Change in Funding Allocations may mislead the reader to conclude that the number of colleges receiving grants is based solely on the $50,000.00 minimum grant and the requirement to fund limited sites or program areas. Page 4 of the letter and pages 13-14 of the report seem to place undue emphasis on these two requirements.

Actually, the number of colleges receiving Perkins Act funds depends on several factors. The States must allocate Title II-C funds according to the formula in section 232, or an alternative formula or method (section 233) -- all designed to drive funds to institutions serving disadvantaged students. Only after running the formula is the $50,000.00 minimum grant rule applied. Also, in discussing how many colleges received funds in light of the requirement to fund a limited number of sites or program areas (section 235), the report does not indicate how many colleges had only one site and thus, would have to make decisions based on the concentrations of special populations in its program areas. It is also not clear whether GAO took into account the fact that all of these requirements attach only to funds under Title II-C of the Act. Some colleges could receive Title II-A funds (sex equity, for example) that would not be subject to a minimum grant amount.

Finally, States and institutions are to also consider the goals identified in the State Plan (effected from the State needs assessment) in making their funding decisions.

Recommendation:

The Department recommends that GAO, in light of the above information, qualify its conclusions regarding allocation and concentration of funds and that the report and the letter include a full explanation of the other factors which must be taken into account besides the $50,000.00 minimum grant requirement.

6. **Assessment Systems (Placement Data)**

The study places significant emphasis on the use of placement data as a "key quality indicator" and the lack of comprehensive data currently available. The Department cautions against overemphasis on placement as a measure of program assessment at the postsecondary level. In October 1990, approximately 70 percent of 18-34 year old students enrolled in postsecondary vocational education courses were already employed.[3] Therefore, using placement data as an assessment measure of program quality at the postsecondary level may not provide a valid measure of program quality.

Recommendation:

The Department strongly encourages GAO to address in the report the limitations and complexities of using placement as a program assessment measure at the postsecondary level.

7. **Quality Approaches (Integration of Academic and Vocational Education)**

On page 6 of Attachment II and in Table II.1, GAO states that of the colleges that reported using integration techniques to a great or a very great extent, 41 percent reported using "other" techniques. Because this represented the largest single percentage of responses, the Department believes that identifying the major initiatives embedded in "other" would exemplify the breadth and scope of activities

[3]National Center for Education Statistics, Vocational Education in the United States: 1969-1990, (Washington, D.C.: GPO, April 1992), p. 77, and U.S. Department of Commerce, Bureau of the Census, Current Population Survey, School Enrollment Supplement: October 1990.

and progress in these areas as well as provide insight for possible future policy direction and technical assistance.

Recommendation:

The Department recommends that the major "other" initiatives and techniques being used by institutions to further integration of vocational and academic education be identified in the report.

Major Contributors to This Report

Human Resources Division, Washington, D.C.	Ruth Ann Heck, Assistant Director, (202) 512-7012 Clarita A. Mrena, Assistant Director Luann M. Moy, Senior Social Science Analyst John G. Smale, Jr., Social Science Analyst
Philadelphia Regional Office	Richard A. McGeary, Evaluator-in-Charge Brenda Lindsey-Johnson, Evaluator Lydia A. Martin, Evaluator Renee W. Lafair, Evaluator

Related GAO Products

Secondary Vocational Education: Status in School Year 1990-91 and Early Signs of Change (GAO/HRD-93-71, July 13, 1993).

Skill Standards: Experience in Certification Systems Shows Industry Involvement to Be Key (GAO/HRD-93-90, May 18, 1993).

Systemwide Education Reform: Federal Leadership Could Facilitate District-Level Efforts (GAO/HRD-93-97, Apr. 30, 1993; GAO/T-HRD-93-20, May 4, 1993).

The Changing Workforce: Demographic Issues Facing Employers (GAO/T-GGD-92-61, July 29, 1992).

Correspondence on Multiple Employment and Training Programs (GAO/HRD-92-39R, July 24, 1992).

Apprenticeship Training: Administration, Use, and Equal Opportunity (GAO/HRD-92-43, Mar. 4, 1992).

Transition From School to Work: Linking Education and Worksite Training (GAO/HRD-91-105, Aug. 2, 1991).

Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries (GAO/HRD-90-88, May 11, 1990).

Vocational Education: Opportunity to Prepare for the Future (GAO/HRD-89-55, May 10, 1989).

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