

GAO

Report to the Chairman, Committee on
Health, Education, Labor, and
Pensions, U.S. Senate

October 2004

**PUBLIC COMMUNITY
COLLEGES AND
TECHNICAL
SCHOOLS**

**Most Schools Use
Both Credit and
Noncredit Programs
for Workforce
Development**





Highlights of [GAO-05-4](#), a report to the Chairman, Committee on Health, Education, Labor, and Pensions, U.S. Senate

Why GAO Did This Study

The goal of most American workers—a well-paying job—will be increasingly linked to adequate training in the coming years. Such training will be key to competing for the 21 million new jobs the Department of Labor projects will be created in the 2002 to 2012 period. People already in, or seeking to enter, the workforce often turn to the nation’s more than 1,100 public community colleges and technical schools to obtain needed skills. Nearly 6 million students were enrolled in for-credit courses in the fall term 2000 and millions more participated in noncredit courses at these schools. GAO was asked to examine: (1) the extent to which community colleges and technical schools are involved in remedial education and workforce training efforts as well as academic preparation activities; (2) how state and federal funding support these academic and training efforts; and (3) what is known about schools’ efforts to measure outcomes, including the rates at which students graduate, transfer to 4-year institutions, pass occupational licensing exams, and gain employment.

The scope of our review included a Web-based survey of 1,070 public community colleges and technical schools, 758 (71 percent) of which completed the survey.

www.gao.gov/cgi-bin/getrpt?GAO-05-4.

To view the full product, including the scope and methodology, click on the link above. For more information, contact David D. Bellis at (415) 904-2272 or bellisd@gao.gov.

PUBLIC COMMUNITY COLLEGES AND TECHNICAL SCHOOLS

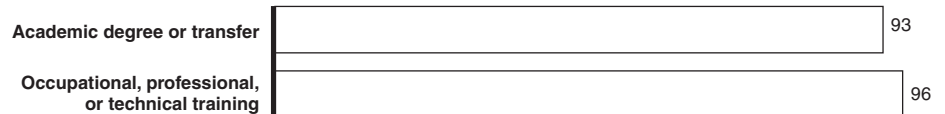
Most Schools Use Both Credit and Noncredit Programs for Workforce Development

What GAO Found

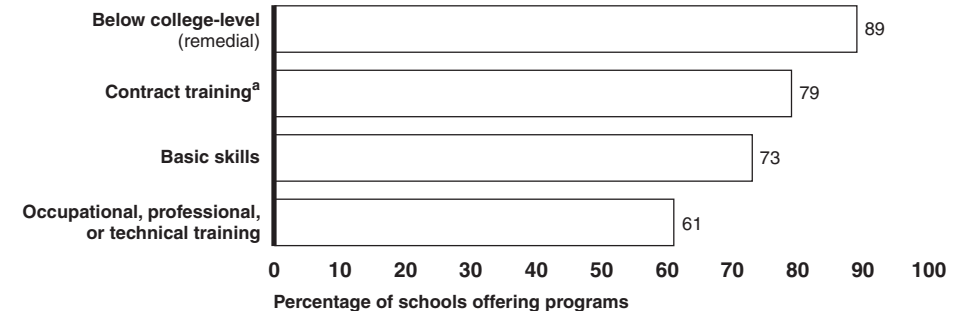
The majority of community colleges and technical schools are offering a broad spectrum of academic and training programs—everything from traditional courses for degree-seeking students to remedial education and contract training customized for individual employers. In addition, 61 percent of schools offer noncredit occupational, professional, or technical training.

Prevalence of Types of Programs at Community Colleges and Technical Schools in the Fall Term of 2002

For-credit programs



Noncredit programs



Source: GAO survey of community colleges and technical schools, 2004.

^aContract training data are for the 2002-03 academic year.

States have long provided the greatest share of funding for public community colleges—between 40 and 45 percent of schools’ total revenue, while federal funding, exclusive of student financial assistance, has been much smaller—about 5 percent. Most states provide more funding for credit programs than noncredit programs.

Most community colleges and technical schools track some education and employment outcomes for their students, but differences in state reporting requirements preclude aggregating these outcomes nationally. However, national studies of representative samples or cohorts of students conducted by the National Center for Education Statistics show that between half and two-thirds of community college students seeking some type of academic or occupational credential succeed in transferring to a 4-year institution or earning a degree, license, certificate, or diploma within 6 to 8 years of initiating studies. GAO’s survey indicated that more than half of students enrolled in remedial and 3 types of basic skills courses completed them successfully.

Contents

Letter		1
	Results in Brief	3
	Background	5
	Community Colleges and Technical Schools Have Expanded Roles in Educating and Training the Nation's Workforce	6
	State Funding to Schools Dominated but Varied by Type of Program; Federal Funding Provided a Much Smaller Share	15
	Differences in Community College and Technical School and State Data Collection Efforts Place Reliance on National Studies for Measuring Overall Student Outcomes	25
	Concluding Observations	32
	Agency Comments	33
Appendix I	Objectives, Scope, and Methodology	34
	The Survey	34
	The Study Population	35
	Developing the Survey	35
	Administering the Survey	35
	Nonsampling Error	36
	Response Rates	36
	Site Visits	37
Appendix II	GAO Contacts and Staff Acknowledgments	38
	GAO Contacts	38
	Staff Acknowledgments	38
Tables		
	Table 1: Overview of Basic Types of Credit and Noncredit Programs	2
	Table 2: Funding Received by Community Colleges and Technical Schools under Nine Federal Programs as Reported by Survey Respondents for Fiscal Year 2003.	22
	Table 3: Percent of Community Colleges and Technical Schools Tracking Education or Employment Outcomes for Three Types of Programs for All Students or a Representative Sample in 2002-03	26
	Table 4: Percent of Community Colleges and Technical Schools Tracking Four Types of Outcomes for Students Who Completed below College-Level (Remedial) and Basic	

Skills Courses and Percent of Responding Schools That Provided Data	27
Table 5: Percent of Community Colleges and Technical Schools That Used Each of Three Methods to Track Outcomes for Students Who Completed Three Types of Programs	28
Table 6: Percent of Students Passing below College-Level (Remedial) and Three Types of Basic Skills Courses during Fall Term of 2002 and Percent of Responding Schools with that Type of Course that Provided Data	32

Figures

Figure 1: Prevalence of Types of Programs at Community Colleges and Technical Schools in the Fall Term of 2002	7
Figure 2: Median Percentage of Students Enrolled in Seven Programs in the Fall Term of 2002 at 758 Schools Completing GAO Survey	9
Figure 3: Percentage of Students Enrolled in Four Types of Credit and Noncredit Programs	11
Figure 4: Percentage of Contracts Reported by Surveyed Schools According to Employer Type in the 2002-03 Academic Year	13
Figure 5: Percentages of Schools' Contracts with Employers by Total Number of Employees	14
Figure 6: Share of Revenues for Public Community Colleges	16
Figure 7: Comparison of State Funding Received by Schools for Credit and Basic Skills Courses	18
Figure 8: Comparison of State Funding Received by Schools for Credit and Noncredit Occupational, Professional, and Technical Training Courses	19
Figure 9: Degree to Which Schools Received State Funding for Contract Training	20
Figure 10: Comparison of Median Funding Per School and Percentage of Schools Reporting Funds, by Federal Program	24

Abbreviations

ABE	Adult Basic Education
AEFLA	Adult Education and Family Literacy Act
ESL	English as a Second Language
GED	General Educational Development
HEA	Higher Education Act
IPEDS	Integrated Postsecondary Education Data System
NCCET	National Council for Continuing Education and Training
NCES	National Center for Education Statistics
NSF	National Science Foundation
TANF	Temporary Assistance for Needy Families
VR	vocational rehabilitation
WIA	Workforce Investment Act

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United States Government Accountability Office
Washington, DC 20548

October 18, 2004

The Honorable Judd Gregg
Chairman
Committee on Health, Education, Labor,
and Pensions
United States Senate

Dear Mr. Chairman:

In future years, higher levels of education and training will continue to provide one of the best opportunities for the nearly 36 million Americans living in poverty¹ to achieve economic well-being and for others who need additional skills to retain or improve their employment status. Accessing these opportunities will be key for these groups to compete for 21 million new jobs that the Department of Labor projects will be created during the 2002 to 2012 period.² The nation's more than 1,100 public community colleges and technical schools are often a resource to which job seekers or those currently employed turn for help in this regard. Each year, these schools educate nearly half of American undergraduate students and provide training for millions of students seeking to upgrade their job skills. Nearly 6 million students were enrolled in for-credit courses in the fall term of 2000 and millions more participated in noncredit courses.

While these schools have often been viewed as mainly providing courses offering college credit for academic or occupational credentials, the educational landscape in which they operate includes a variety of noncredit programs as well, as shown in table 1. For example, a school might provide training in English as a Second Language to help give immigrants this basic skill for the job market, or it might create training for a specific company.

¹DeNavas-Walt, Carmen, Bernadette D. Proctor, and Robert J. Mills, U.S. Census Bureau, Current Population Reports, P60-226, *Income, Poverty, and Health Insurance Coverage in the United States: 2003*, U.S. Government Printing Office, Washington, D.C.: 2004.

²Monthly Labor Review, *Employment Outlook: 2002-12, Industry Output and Employment Projections to 2012*, Jay M. Berman, February 2004.

Table 1: Overview of Basic Types of Credit and Noncredit Programs

Type of program	Description
College credit programs	
Academic degree or transfer	Courses leading to an Associate of Arts, Associate of Science, or other academic degree or eligible for transfer credit to an institution that offers baccalaureate degrees.
Occupational, professional, or technical training	Courses leading to an Associate of Applied Science or other occupationally related degree, certificate, license, or diploma (e.g., dental assistant certificate).
Noncredit courses or programs	
Occupational, professional, or technical training	Noncredit courses leading to a certificate, license, or diploma (e.g., noncredit certified nursing assistant program).
Below college-level academics (remedial)	Courses, including mathematics, English, and reading that are required before students who lack college-level proficiency in those subjects can be accepted in a college-level program.
Basic skills	Courses, including Adult Basic Education, English as a Second Language, and those preparing students for the General Educational Development examination.
Contract training	Employee training provided under contract to businesses, government entities, or other employers.
Other	Includes personal enrichment courses and any other courses not in the above categories.

Source: GAO survey of community colleges and technical schools, 2004.

Little is known about the full spectrum of credit and noncredit academic and training programs established at community colleges and technical schools. At your request, we conducted a study to determine: (1) the extent to which community colleges and technical schools are involved in remedial education and workforce training efforts as well as academic preparation activities; (2) how state and federal funding support these academic and training efforts; and (3) what is known about schools' efforts to measure outcomes, including the rates at which students graduate, transfer to 4-year institutions, pass occupational licensing exams, and gain employment.

Our answers are based in part on a Web-based survey we conducted of public community colleges and technical schools nationwide. Survey data for all programs, except contract training, was for the fall term of 2002. (We did not include proprietary schools, such as for-profit technical schools, in our survey population.) We activated the survey Web site, notified the 1,070 public community colleges and technical schools in our survey population, and received responses from 758 community colleges

and technical schools (71 percent).³ We checked the survey responses for obvious errors and problems, but did not independently verify the accuracy of the information these schools provided. We also obtained and relied on data from the National Center for Education Statistics' (NCES) Integrated Postsecondary Education Data System (IPEDS) to identify our study population. We assessed the reliability of the IPEDS data, reviewing NCES's methods for testing the internal consistency of data reported by schools. We supplemented our survey data with visits to community college and state officials in three states—Florida, Texas, and Washington—and interviewed officials in a fourth state, North Carolina, by telephone.⁴ Using the recommendations of education and workforce experts at community colleges and professional organizations, we chose these states because they differed in such ways as the extent of state funding for credit and noncredit courses, the tracking of student education and employment outcomes, the types of workforce development efforts, and geographic location. We examined two or more schools in each state, except for Texas where we only visited one school, selecting them on the basis of expert recommendations to obtain a mix based on differences in level of student enrollment and urban and rural locale. We also relied on the findings of national outcomes studies regarded to be authoritative by researchers and other experts in the field. We reviewed these studies to assess the validity of their findings and found them to be valid. We conducted our study from May 2003 through August 2004 in accordance with generally accepted government auditing standards.

Results in Brief

Our survey results indicate that the majority of community colleges and technical schools are offering a broad spectrum of academic and training programs—everything from traditional courses for degree-seeking students to remedial education and specialized training customized for business clients. While the education and training options are many, the primary focus of schools and students remains academic credit programs that may lead to a degree, credential, or transfer to a 4-year institution. Noncredit training is substantial at some schools, however, and while

³The 758 respondents to our survey included 634 community colleges, 94 vocational or technical schools, 3 high schools offering postsecondary programs, 23 other schools (e.g., junior colleges), and 4 schools that did not provide their school type, all of which were included in our analysis. Throughout this report, we refer to all these respondents as “community colleges and technical schools.”

⁴We also visited community colleges and technical schools in California, Maryland, Oregon, and Virginia to pretest the survey.

some of these programs are less well known, they provide some advantages to the colleges, students, and employers alike. In particular, more than three-fourths of schools were involved in contract training—providing existing or customized programs to give incumbent workers new or upgraded skills. One community college in Florida, for example, annually contracts with 300 companies to train about 5,000 employees. Aside from training under specific contracts, 61 percent of schools responding to our survey report offering noncredit occupational, professional, or technical training. A community college in Texas, for example, offers a series of courses that, while not providing college credit, leads to a certificate in the medical coding system that hospitals use to obtain reimbursements from the government and insurers. Offering such training on a noncredit basis allows schools to use shorter training periods and more quickly add or delete courses to meet local training needs. Regardless of whether programs were credit or noncredit, schools most frequently offered occupational, professional, or technical training programs in three fields projected by the Department of Labor to have high growth in future years—health care, business, and information technology.

States historically have provided the greatest share of funding for public community colleges, while federal funding has been comparatively much smaller. On average, Department of Education data show that between 1992-93 and 2000-01, states provided between 40 and 45 percent of schools' total revenue—about twice as much as provided by local taxes and student tuition and fees, respectively. Federal funding, exclusive of student financial assistance, provided about 5 percent. On a program-by-program basis, state funding varied considerably between credit and noncredit programs. While about one-third of schools responding to our survey reported receiving about the same level of state funding for credit and noncredit occupational, professional, and technical training programs, most states fund noncredit courses to a lesser degree—and in some cases not at all. Similarly, schools reported large differences in amounts received under each of nine different federal programs. Most schools received federal funding—a median of about \$300,000—from the Perkins Vocational Education program. Overall, seven of the nine programs each provided a median of under \$200,000 to the one-third or less of colleges and schools reporting such data.

Most community colleges and technical schools reported tracking some education and employment outcomes for their students, but differences in state reporting requirements preclude aggregating these performance data to report on the proportion of students nationwide that graduate, transfer

to 4-year institutions, pass licensing examinations, or gain employment. In addition, while the Department of Education collects graduation and completion rates for full-time, degree-seeking students at most schools, most community college students do not meet this definition and are not included. Graduation data reported by one community college in Washington State, for example, represented 20 percent of students who entered school in the fall term. The best national outcome data are from studies of representative samples or cohorts of students conducted by the National Center for Education Statistics. Two of these studies indicate that between half and two-thirds of community college students seeking some type of academic or occupational credential succeed in transferring to a 4-year institution or earning a degree, license, certificate, or diploma within 6 to 8 years of initiating studies. For community college students enrolled in remedial academic courses, our survey results mirrored those reported by NCES in 1995—a median of about two-thirds of students successfully completed such courses. Our survey also indicated that a median of 60 percent or more of students enrolled in General Educational Development or other Adult Basic Education courses completed them successfully.

Background

Since the first public 2-year college opened more than 100 years ago, community colleges have experienced considerable change in their purpose and mission. They have expanded beyond their original academic or vocational focus to meet a wide variety of educational, economic, and social needs. Community colleges have kept their “transfer function,” preparing students for 4-year institutions, while assuming a role in occupational skills training and adult basic education. With open admissions and low tuition policies, community colleges serve the needs of a diverse student body, ranging from people without any type of educational credential to those with advanced academic degrees. Between 1980 and 2000, the number of community colleges grew about 14 percent with enrollments increasing about 32 percent;⁵ enrollments are projected to increase about 14 percent from 2001 to 2013.⁶ According to data

⁵Enrollments for 1996 and later years are for degree-granting institutions (institutions that award degrees at the associate level or higher and were eligible to participate in Title IV federal financial aid programs). All other years are for institutions of higher education.

⁶National Center for Education Statistics (NCES), *Digest of Education Statistics 2002*, June 2003 and NCES, *Projections of Education Statistics to 2013*, Washington, D.C.: October 2003.

compiled by NCES, community college students are more likely than 4-year college students to be 24 years of age or older, not enroll directly after high school, attend part-time and work full-time while enrolled, be financially independent for federal financial aid purposes, have dependents, be a single parent, or not have a high school diploma.

Community colleges and technical schools have a wide variety of program types from which to draw. The programs include traditional academic courses for students intending to obtain an associate degree or transfer to a baccalaureate-granting institution as well as remedial education to bring students to college-level proficiency and basic skills training for people who want to improve their employability or pass the General Educational Development examination. Separate from these program types, other programs offer credit and noncredit occupational, professional, and technical training leading to degrees, certificates, licenses, or diplomas for new and existing workers; training developed for specific employers; and other programs to meet the personal and professional interests of the local community. Such training can range from a 2-year program that prepares students to take a certification test to single, short-term introductory courses in a subject such as introduction to the Internet.

Community Colleges and Technical Schools Have Expanded Roles in Educating and Training the Nation's Workforce

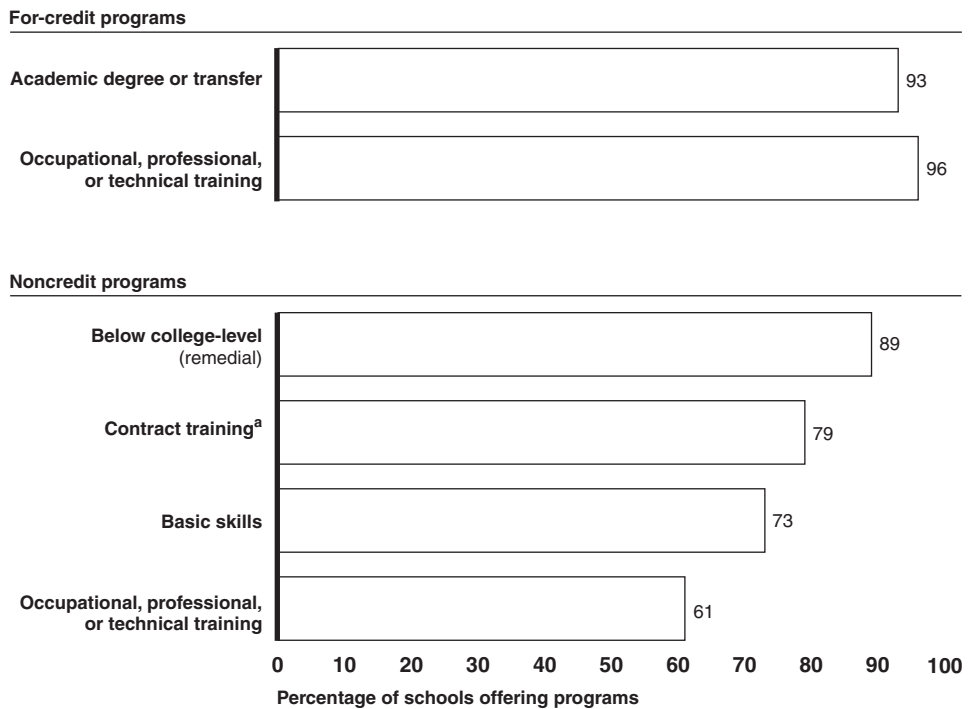
Community colleges and technical schools offered a mix of credit and noncredit education and training programs that served to help students transition from high schools to postsecondary institutions, prepare people for college-level learning, and provide new and existing workers with new or upgraded job skills. While the education and training options are many, the primary focus of schools and students remains academic credit programs that may lead to a degree, credential, or transfer to a 4-year institution. Noncredit training is substantial at some schools, however, and most colleges and schools offer contract training that can be customized for employers seeking new or upgraded skills for their employees.

Most Colleges and Schools Offer a Mix of Credit and Noncredit Academic and Training Programs

The majority of community colleges and technical schools responding to our survey reported offering a wide range of academic and training programs in addition to their college credit curriculum. Nearly all schools reported offering two types of credit programs—those that lead either to a 2-year degree or transfer to a baccalaureate-granting institution (93 percent), and those that lead to an occupational, professional, or technical credential (96 percent). Each of the four types of noncredit programs was offered by at least 61 percent of the schools that responded to our survey. These programs provided skill proficiency ranging from

better academic preparation to training that leads to an occupational license or certificate (see fig. 1).

Figure 1: Prevalence of Types of Programs at Community Colleges and Technical Schools in the Fall Term of 2002



Source: GAO survey of community colleges and technical schools, 2004.

^aContract training data are for the 2002-03 academic year.

Some officials we talked with during site visits indicated that states and colleges consider occupation projections when establishing training programs. Two states we visited had strategies to help guide schools in establishing programs that address the needs of local businesses and the workforce. Florida, for example, created a targeted occupations list to guide program offerings at community colleges. Colleges may offer programs from the list without obtaining special permission or review from the state. In Washington State, community college officials said that colleges proposing new professional or technical programs must show that the estimated output of the proposed program along with similar programs statewide does not exceed the projected employment need. Our survey data show many schools offer programs in occupations with projected growth. Schools reported that the most frequently offered fields

of study, whether offered for credit or noncredit, were in the areas of health, business, and computer/information technology.⁷ According to Department of Labor projections, these three fields should experience high growth in employment.

Credit Programs Remain a Major Focus for Most Schools and Students

Credit programs were the most likely programs to be offered by the 758 community colleges and technical schools that responded to our survey and they were also the program areas with the greatest median number of enrolled students. While students were often enrolled in more than one type of program,⁸ the median percent of students enrolled in academic credit programs was 49 percent, and the median percent of students enrolled in occupational, professional, or technical training programs for credit was 33 percent. The median percent of students enrolled in five noncredit programs ranged from 1 to 14 percent. (See fig. 2.)

⁷Other frequently reported offerings at the surveyed schools were engineering technologies and technicians, agriculture and related sciences, security and protective services, and personal and culinary services.

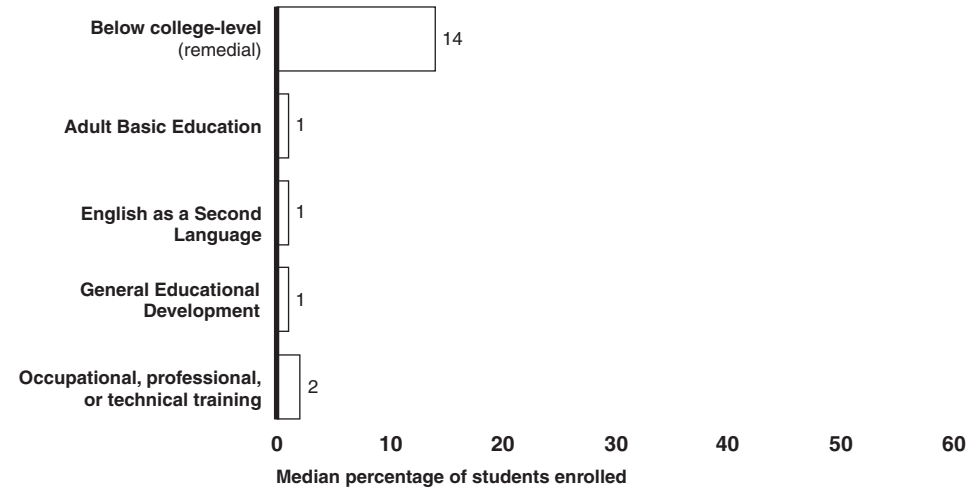
⁸For example, students enrolled in academic credit programs may also be enrolled in remedial math or English.

Figure 2: Median Percentage of Students Enrolled in Seven Programs in the Fall Term of 2002 at 758 Schools Completing GAO Survey

For-credit programs



Noncredit programs



Source: GAO survey of community colleges and technical schools, 2004.

Most community colleges and technical schools made their credit curriculums available to high school students through transition programs that link secondary and postsecondary academic and vocational education. Among schools responding to our survey almost all community colleges and technical schools were involved in at least one of three such programs:

- Over 90 percent of schools participated in dual or concurrent enrollment programs that allowed high school students to attend college-level classes and earn both high school and college credit.

-
- Nearly 75 percent of schools had “Tech-Prep” programs⁹ that consist of 2 years of high school and 2 years of higher education or an apprenticeship program leading to a credential in specific career fields such as welding or accounting.
 - Slightly less than half of schools participated in school-to-career programs that link the high school with the business community to improve student transitions to work.¹⁰

At the schools we visited, the demand for these programs could be seen in the size of the enrollments. Concurrent enrollment at one community college in Texas, for example, included more than 1,400 high school students in spring 2002 and was expected to exceed 1,800 the next fall. These students could earn up to 1 year of college credit prior to high school graduation. A community college in Washington State with a total headcount enrollment of 39,020 was serving 816 high school students under a dual credit program in the 2002-03 academic year.

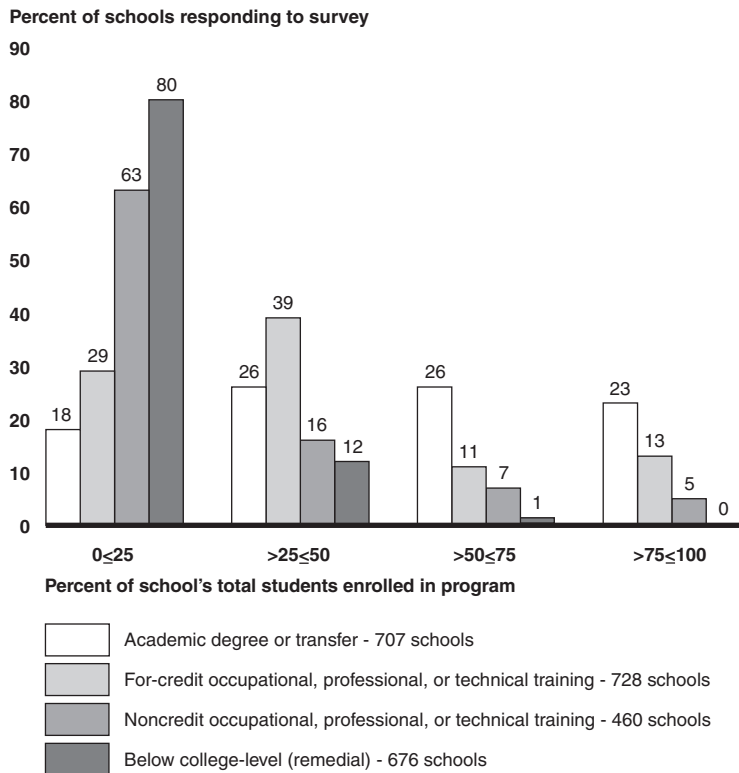
Noncredit Programs Enroll Substantial Numbers of Students at Some Schools

While schools reported higher student enrollment in credit courses overall, at some schools large proportions of students were enrolled in noncredit programs. Figure 3 shows the relative number of students enrolled in four types of credit and noncredit programs in the fall term of 2002, as reported by the surveyed schools.

⁹Funded in part through the Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998.

¹⁰About 87 percent of survey respondents provided data for this question.

Figure 3: Percentage of Students Enrolled in Four Types of Credit and Noncredit Programs



Source: GAO survey of community colleges and technical schools, 2004.

Noncredit programs offer various benefits to schools and employers. School administrators have found that noncredit courses allow them to address shifts in local labor markets, often in a short time. They can develop and deliver noncredit courses more quickly than credit courses because noncredit courses have a less complicated review and approval process. Schools may use noncredit courses as a transition to adding or deleting programs from the curriculum. In Florida, for example, a community college official said the college collaborated with a local hospital to develop a course for interpretive services that train intermediaries to work between English speaking staff and foreign language patients. The college started the course as noncredit with the view of later converting the course to credit if interest and enrollment grew. In contrast, declining numbers of students in a real estate program led the college to change it from credit to noncredit.

Benefits to students enrolled in noncredit programs often include low or no tuition and fees, simpler enrollment procedures, less formal classroom settings, and more flexible class schedules. Noncredit education helps students wanting to upgrade skills, retrain for a new career, prepare for a licensing exam, or pursue vocational interests. An administrator at a North Carolina community college noted that many noncredit courses are intended for students who do not want or need a degree—or another degree. For some people, completion of a few short-term noncredit courses serves as a transition to the credit academic or occupational pathway that leads to a degree or certificate.

Perhaps one of the biggest benefits of noncredit programs is to provide transitional education for people who leave high school unprepared for college-level programs. Community colleges, with their open admissions policies, are a prime source of instruction for the great number of students needing remediation. Overall, more than a dozen states estimated that half of students entering community colleges required some type of remedial education, according to a state survey conducted by the Education Commission of the States in 2001.¹¹ The remaining 14 states providing such data estimated the proportion of entering students needing remediation ranged from a low of 10 to a high of 49 percent. States report continuing demand for remedial education. Washington State, for example, reported in 2004 that about half of students entering community colleges and technical schools within 3 years of high school take at least one remedial course, most often in math.

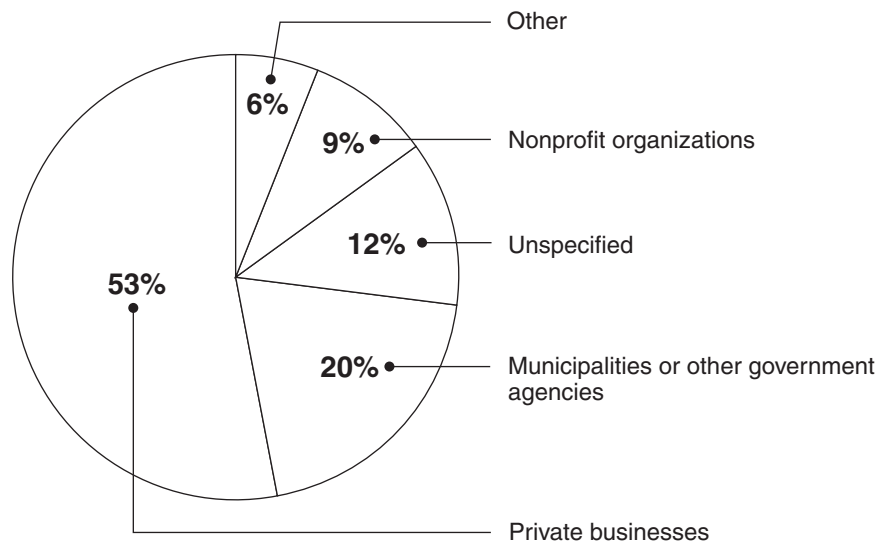
Schools Offer Contract Training That Can Be Customized for Employers Seeking New or Upgraded Skills for Employees

One other type of noncredit program—contract training—is treated separately here because many colleges administer their contract training separately from other college programs, and less may be known about it. Contract training programs typically offer flexibility and responsiveness in meeting the needs and schedules of trainees and their employers. In consultation with the business or organization, the school may provide an existing or specially created course, hold the training at the worksite or on campus, and use existing faculty or hire instructors. Training may focus on management, computer, language, customer service, or any other subject that an employer considers important to improving its workforce.

¹¹Education Commission of the States, *State Policies on Community College Remedial Education: Findings from a National Survey*, Denver, Colorado: September 2002.

More than three-quarters of schools responding to our survey offered contract training in the 2002-03 academic year. Schools responding to our survey reported serving a total of over 1 million trainees through contract training during the 2002-03 academic year, with a median of 982 trainees per school. More than half of the reported contracts were with private companies, but schools also contracted with government and nonprofit agencies. (See fig. 4.)

Figure 4: Percentage of Contracts Reported by Surveyed Schools According to Employer Type in the 2002-03 Academic Year

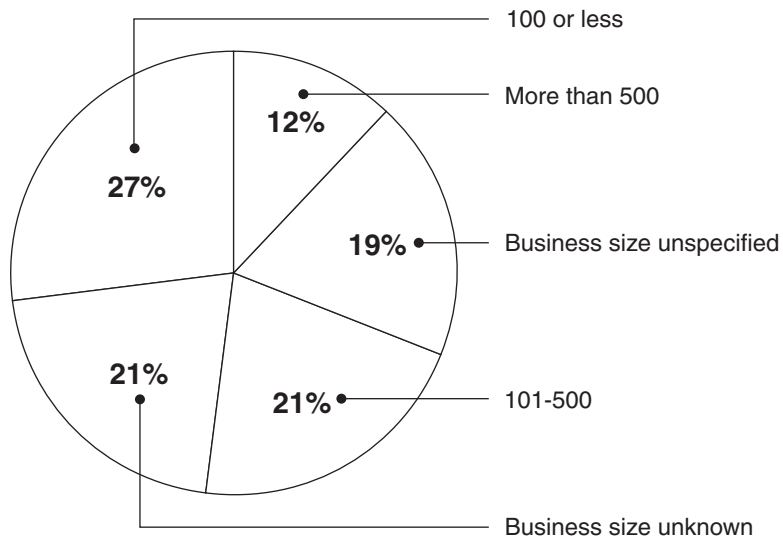


Source: GAO survey of community colleges and technical schools, 2004.

Note: Computed only for schools providing data on employer type.

Contract training was provided to employers with 100 or fewer employees about one-quarter of the time. (See fig. 5.) A workforce development expert we spoke with said that larger employers are more likely to provide the minimum class size that community colleges need to make customized training financially viable.

Figure 5: Percentages of Schools' Contracts with Employers by Total Number of Employees



Source: GAO survey of community colleges and technical schools, 2004.

Note: Computed only for schools providing data on employer size.

Community colleges and technical schools have pursued contract training for such reasons as the following: to meet the training needs of local employers, to cultivate potential employers for their students, and to develop an additional revenue source. However, contract training presents an entrepreneurial challenge to community colleges and technical schools since employers are free to choose other training sources, including in-house instructors, private contractors or consultants, 4-year colleges, or other community colleges. This competition provides an incentive for community colleges to develop networks among local employers and market their training services. For example, a community college administrator in Florida stressed the importance of partnerships with local businesses and chambers of commerce in identifying potential clients.

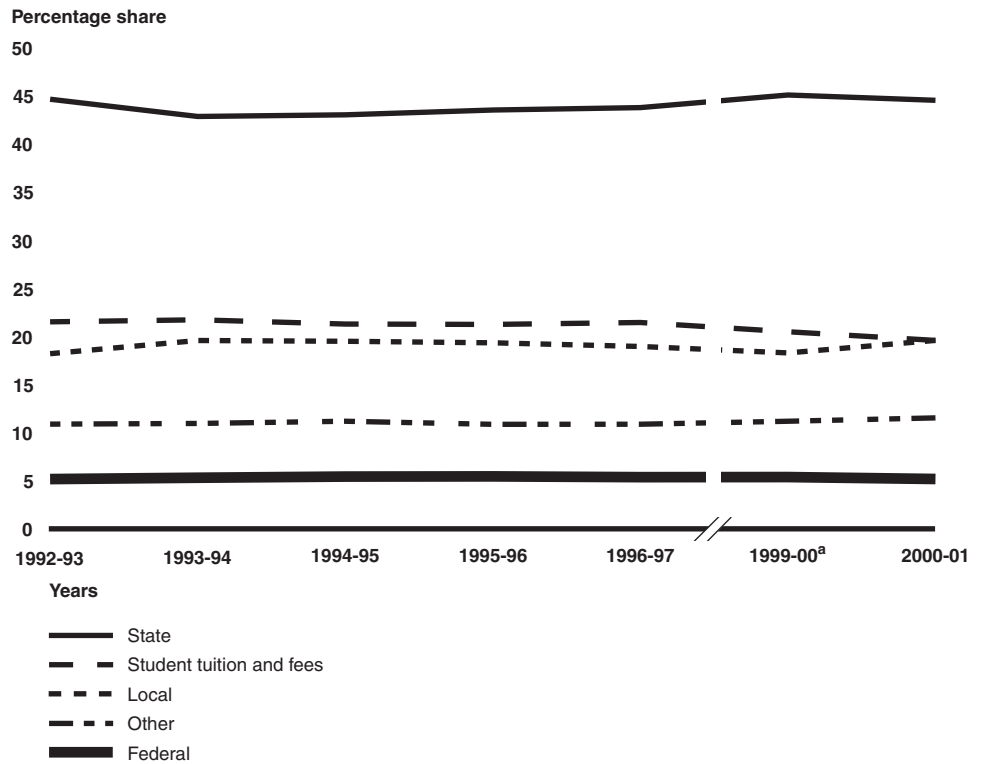
State Funding to Schools Dominated but Varied by Type of Program; Federal Funding Provided a Much Smaller Share

States have historically contributed the largest share of funding for public community colleges compared with other public and private funding sources. State funding policies generally differ among programs, however, in that states often provide less funding to support schools' noncredit education and training programs. Overall the share of federal funding to public community colleges has been stable, but comparatively small. The level of federal funding each school receives generally depends on participation in a number of grant programs and may flow directly to schools or indirectly through grants to states or other entities.

States Are the Largest Funding Source, but Many Schools Reported Receiving Less State Funding for Some Types of Noncredit Courses

State funding has been a major source of revenue for public community colleges for years. Data collected by the National Center for Education Statistics show that the share of their revenue from state governments has remained relatively stable between 40 and 45 percent of all revenue from 1992-93 through 2000-01, the latest year that published NCES data are available. As figure 6 shows, states provide about double the amounts received from student tuition and fees and local governments, which are the next two largest revenue sources.

Figure 6: Share of Revenues for Public Community Colleges



Source: National Center for Education Statistics.

^aPublished data unavailable for 1997-98 and 1998-99.

Every public community college system in the country receives some level of state support. Survey results reported by the Education Commission of the States in 2000 showed that 29 states used funding formulas¹² to determine the amount to be appropriated for community colleges as a whole, the amount to be distributed to each college, or both. The primary elements used in the state formulas were enrollment, space utilization, and comparison with peer institutions.

Community colleges receive less funding for noncredit academic and occupational training programs than for credit programs for two main reasons. First, less than half of all states, according to national surveys

¹²Formulas were developed through a legislative process or by an entity such as the state higher education coordinating board.

conducted by the Education Commission of the States¹³ and the National Council for Continuing Education and Training,¹⁴ fund noncredit programs at community colleges. Second, most of those states that do provide funding for noncredit programs based on numbers of full-time equivalent students provide funding at a lower rate—generally 50 to 75 percent of the rate provided for credit programs. Our survey responses indicated that states often provided lower levels of funding for courses offered without college credit in three areas—basic skills; noncredit occupational, professional, and technical training; and contract training.

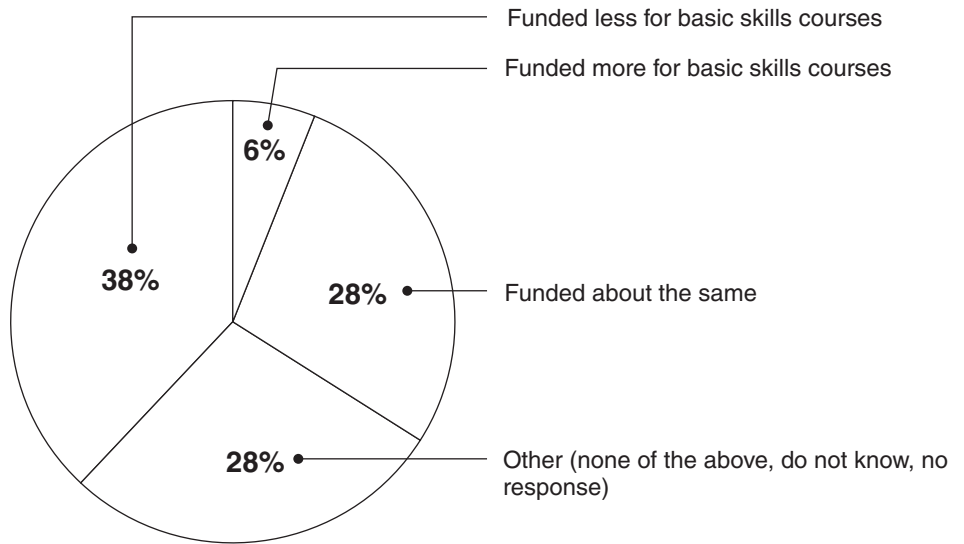
Basic Skills

Nearly 40 percent of schools responding to our survey reported receiving less state funding for basic skills courses (Adult Basic Education, English as a Second Language, and General Educational Development) compared with funding received for credit courses (see fig. 7). A somewhat lower percentage of schools reported receiving about the same or higher level of state funding for these courses.

¹³Education Commission of the States, *State Funding for Community Colleges: A 50-State Survey*, Denver, Colorado: November 2000.

¹⁴Study conducted for the National Council for Continuing Education and Training (NCCET) by Larry J. Warford, assisted by NCCET 2000-01 regional representatives.

Figure 7: Comparison of State Funding Received by Schools for Credit and Basic Skills Courses



Source: GAO survey of community colleges and technical schools, 2004.

Schools often rely heavily on state and federal funding sources to support their basic skills programs, as these developmental courses are often offered at little or no cost to students in order to increase accessibility to all populations. However, increased demand for such services has created challenges for schools in states such as Texas, where state funding for adult education and literacy has been insufficient to meet current and growing demand for these services, according to a 2003 state report.¹⁵

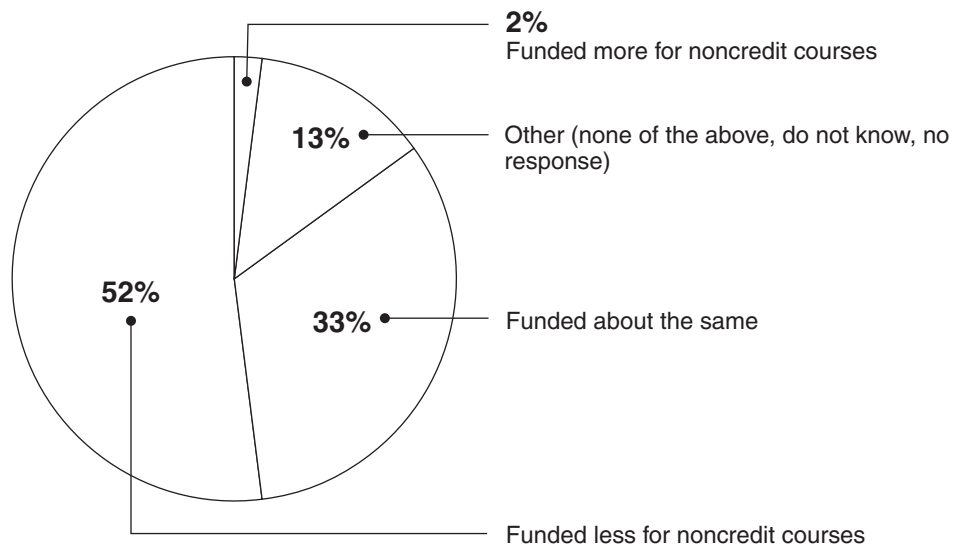
Noncredit Occupational, Professional, and Technical Training

Nearly two-thirds of community colleges and technical schools responding to our survey reported receiving state funds for noncredit occupational, professional, or technical training courses, while nearly one-fifth reported that they were not permitted to use state funds to support these training courses. As shown in figure 8, of the schools that did receive direct state funding, over half reported receiving lesser amounts for these noncredit training courses than courses offered for credit. About one-third of

¹⁵In Texas, nearly all public community and technical colleges serve as adult education partners in the delivery of basic skills programs.

schools received the same level of state support for credit and noncredit occupational programs.

Figure 8: Comparison of State Funding Received by Schools for Credit and Noncredit Occupational, Professional, and Technical Training Courses



Source: GAO survey of community colleges and technical schools, 2004.

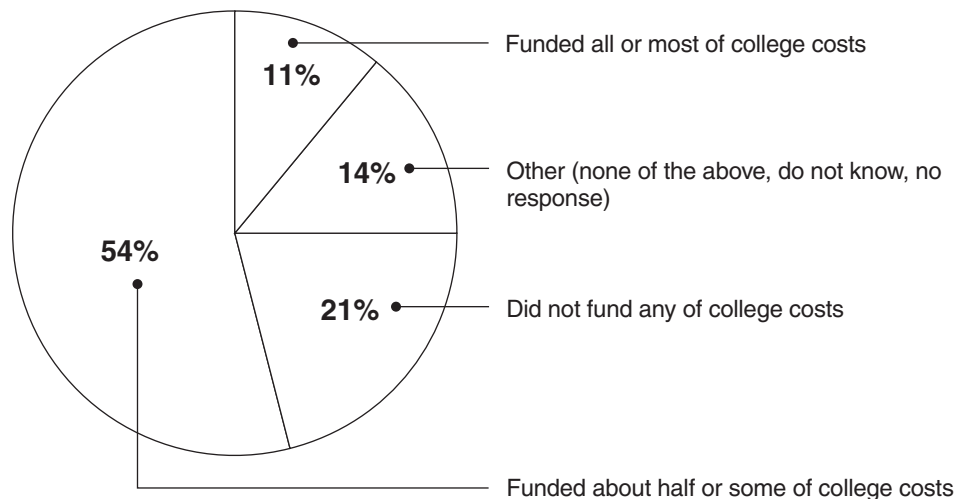
Lower levels of state funding for noncredit training courses provided both challenges and benefits to schools, according to college officials. An official from the North Carolina Community College System said that because the state funds noncredit occupational programs at 75 percent of credit programs, schools face challenges in operating training programs in areas (such as biotechnology) that have high demand among local employers but also higher operating costs in terms of teacher salaries and equipment.¹⁶ On the other hand, a representative from a community college in North Carolina said that lower state funding for noncredit programs encouraged the school to charge tuition at a level that would make the program self-supporting, providing an additional revenue stream as schools in this state are allowed to keep tuition received instead of returning it to the state.

¹⁶Similarly, the President of a Washington State community college cited challenges identifying funding sources for high start-up costs associated with some new training programs.

Contract Training

Nearly two-thirds of community colleges and technical schools responding to our survey reported receiving state funds to defray costs of delivering employee training under contract to businesses, government entities, or other employers, as shown in figure 9. For the majority of schools (54 percent), the state funded only a portion (about half or less) of their contract training costs, while a few (11 percent) received state funds covering all or most of their costs in providing contract services to customers.

Figure 9: Degree to Which Schools Received State Funding for Contract Training



Source: GAO survey of community colleges and technical schools, 2004.

States we visited funded contract training at community colleges differently from their other academic and training programs. Some states had established separate grant programs for this purpose. Florida, for example, funds contract training primarily through two state grant programs. The first of these—the Quick Response Training Program—is designed to retain and attract businesses creating new high-quality jobs. A representative from one Florida community college said that the college used a Quick Response Training grant to prepare a labor pool as an incentive for DHL, an express shipping company, to relocate to the county. The second program—the Incumbent Worker Training Program—is targeted to maintain the competitiveness of existing businesses by upgrading employee skills. Since their inception in 1993 and 1999, respectively, these programs have funded training for over 100,000 employees across the state.

In North Carolina, the state funds contract training at community colleges for companies creating 12 or more new jobs in a 1-year period through the New and Expanding Industry Training Program, first established in 1958. During fiscal year 2001-02, this state-funded program served nearly 15,000 trainees. In addition, the state's Focused Industrial Training program allows industries related to manufacturing, computers, and telecommunications to upgrade employees' technological skills. State funding under this program allowed community colleges throughout the state to train more than 10,000 employees of over 750 companies during fiscal year 2001-02.

Federal Funding Is Comparatively Small and Comes from Many Programs

The federal share of public community college funding has been fairly stable over time, but relatively small compared with other funding sources. Excluding federal student financial aid, federal funding provided about 5 percent of total public community college revenue between 1992-93 and 2000-01 as previously shown in figure 6.¹⁷ These revenues are provided through a number of federal programs operated by various agencies, including the Departments of Education and Labor. However, information on the extent that community colleges receive federal funds through each of these programs is limited at the federal level. While some funds—such as those available under Title III of the Higher Education Act—are provided directly from federal agencies to schools, other funds—such as those under the Workforce Investment Act—are provided to states that subsequently determine whether community colleges or other entities will receive funding. There are no clear federal requirements to report this information back to the federal agency—the Department of Labor—distributing these state-based grants.

We surveyed community colleges and technical schools to determine the level of federal support through each of nine different programs.¹⁸ Our results, however, are not comprehensive because only 71 percent of schools responded to our survey, and of those schools—between 22 and 41 percent of respondents—did not provide data for individual federal

¹⁷Published data are unavailable for 1997-98 and 1998-99.

¹⁸We chose these nine programs in consultation with community college experts and a review of the relevant literature. Schools were asked to include all federal funding received through each of the nine programs, including federal funding that was passed through the state. About 18 percent of survey respondents did not respond as to whether or not they included federal funding passed through the state.

funding sources. What our survey results did show was that these nine programs provided a minimum of nearly \$700 million, or about 4 percent of total revenues, to the schools that reported receiving funds. As shown in table 2, less than 30 percent of federal funds from these 9 programs were provided directly to community colleges; the rest was provided indirectly through the states. Community colleges and technical schools that responded to our survey, on average, each received funds from three of these nine federal sources.

Table 2: Funding Received by Community Colleges and Technical Schools under Nine Federal Programs as Reported by Survey Respondents for Fiscal Year 2003

Dollars in millions

Program name	Purpose	Total federal program funding	Funding received by all community colleges and technical schools responding to survey	Percentage of all colleges and schools responding to survey that reported amount of program funding ^a
Program funds provided indirectly through states (72%)				
Perkins Vocational Education Program (Vocational Education)	Reauthorized in 1998, provides assistance for secondary and postsecondary vocational education (mostly less-than-4-year postsecondary institutions).	\$1,329	\$205.9	78%
Workforce Investment Act (WIA) - Title II Program (Adult Education and Family Literacy Act - AEFLA)	Part of the WIA of 1998, supports adult basic skill programs, high school completion programs, and programs that enable adults to become more employable, productive, and responsible.	\$569	\$77.8	66%
Temporary Assistance for Needy Families (TANF) Program	Enacted in 1996, provides grants to states for assistance to needy families. At state option, assistance can be used for training programs to help recipients move from welfare to work.	\$16,488	\$63.0	63%
Dislocated Worker Activities under Workforce Investment Act (WIA) - Title I	Established in 1998, provides training to individuals who have lost their jobs and are unlikely to return to those jobs or similar jobs in the same industry.	\$1,501	\$54.7 ^b	64% ^b

Dollars in millions

Program name	Purpose	Total federal program funding	Funding received by all community colleges and technical schools responding to survey	Percentage of all colleges and schools responding to survey that reported amount of program funding ^a
Vocational Rehabilitation (VR) Program	Enacted in 1973, provides grants to states for comprehensive vocational rehabilitation services to help persons with physical and mental disabilities become employable and achieve full integration into society.	\$2,533	\$34.3	61%
Youth Activities under Workforce Investment Act (WIA) - Title I	Enacted in 1998, provides training to low-income youth age 14-21.	\$995	\$30.4 ^b	61% ^b
Adult Activities under Workforce Investment Act (WIA) - Title I	Enacted in 1998, provides training to individuals age 18 and older.	\$895	\$24.1 ^b	59% ^b
Program funds provided directly to schools (28%)				
Higher Education Act (HEA)- Title III Program (Aid for Institutional Development)	First enacted in 1965, provides grants to higher education institutions to strengthen academic quality, institutional management, and financial stability.	\$389	\$168.7	63%
National Science Foundation (NSF) Research Grant Program	Created in 1950, NSF supports science and engineering in general and funds basic research across many disciplines, mostly at U.S. colleges and universities.	\$903	\$25.5	63%
Total		\$25,602	\$684.4	

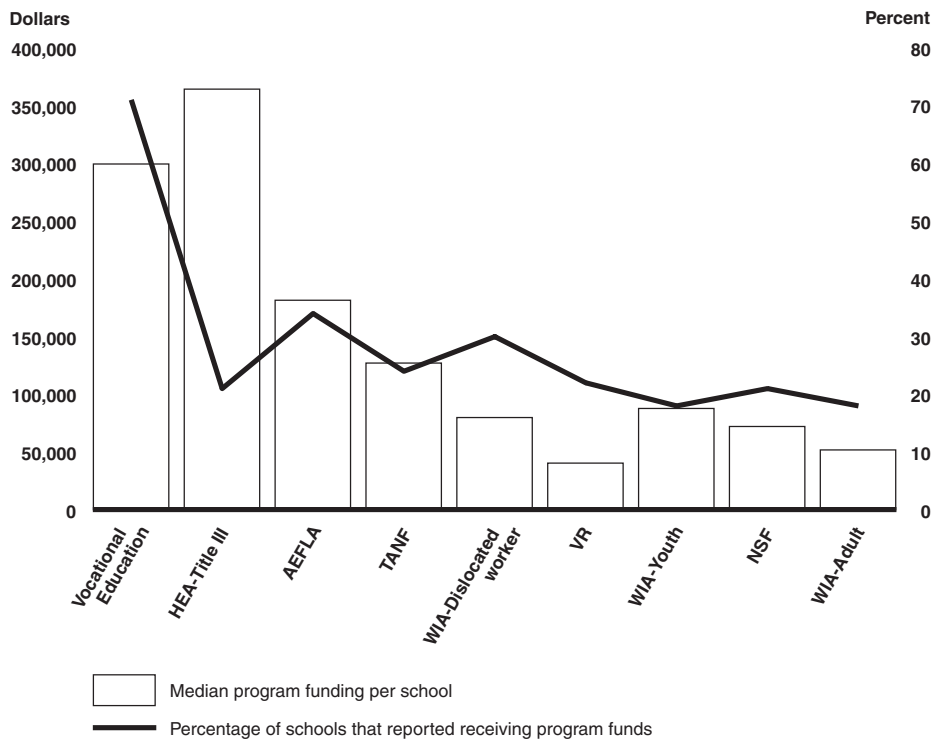
Sources: GAO survey of community colleges and technical schools, 2004, and Budget of the United States Government, Fiscal Year 2005, Appendix.

^aTotal number of schools responding to our overall survey was 758 out of 1,070 public community colleges and technical schools, including schools that reported receiving \$0 program funds.

^bAmounts received under the WIA dislocated worker program, youth program, and adult program are likely to be understated because only 30 percent, 18 percent, and 18 percent of the survey respondents, respectively, reported funding above \$0, while the percent of schools reporting participation in these programs was about 2, 1.5, and 3.4 times higher, respectively. Between 83 and 86 percent of survey respondents provided data on participation in the three WIA programs.

Community colleges and technical schools reported considerable differences in the amounts received under each of the nine different federal programs. Colleges and schools reported receiving the least amount of median funding from the Vocational Rehabilitation program (median of about \$40,000) and the most median funding from programs under Title III of the Higher Education Act (median of over \$350,000). Overall, seven of the nine programs provided a median of under \$200,000 to the one-third or less of colleges and schools responding to our survey that reported receiving revenue from these programs.

Figure 10: Comparison of Median Funding Per School and Percentage of Schools Reporting Funds, by Federal Program



Source: GAO survey of community college and technical schools, 2004.

Differences in Community College and Technical School and State Data Collection Efforts Place Reliance on National Studies for Measuring Overall Student Outcomes

Most community colleges and technical schools responding to our survey have systems in place to measure education and employment outcomes for students enrolled in at least some programs, but differences in how these schools and states measure and report such data preclude using them to report nationally on the proportion of community college and technical school students who graduate, transfer to 4-year institutions, pass licensing examinations, or gain employment. Likewise, while several federal programs each have a methodology to collect outcomes such as graduation rates from schools, this methodology is often applied to relatively few students and, therefore, the results may not represent outcomes for students nationwide. The best national outcome data, which stem from studies conducted by the National Center for Education Statistics, show that between half and two-thirds of community college students seeking an academic credential were successful in doing so or in transferring to a 4-year institution within 6 to 8 years of enrolling in community college programs.

Community Colleges and Technical Schools and States Differ in Measuring and Reporting Education and Employment Outcomes

Almost all community colleges and technical schools responding to our survey developed some type of student education or employment outcome measures for their students, but they most frequently collected such data for students enrolled in for-credit academic and occupational, professional, or technical training programs. For example, as shown in table 3, over half of community college and technical schools responding to our survey tracked both education and employment outcomes for both types of for-credit programs, but only about a sixth of community colleges and technical schools tracked these data for noncredit occupational, professional, or technical training programs.

Table 3: Percent of Community Colleges and Technical Schools Tracking Education or Employment Outcomes for Three Types of Programs for All Students or a Representative Sample in 2002-03

Type of program completed	Types of outcomes tracked			
	Both education and employment	Education only	Employment only	Neither education nor employment
For-credit academic ^a	52	20	10	12
For-credit occupational, professional, or technical training	59	11	17	8
Noncredit occupational, professional, or technical training	17	13	7	49

Source: GAO survey of community colleges and technical schools, 2004.

Note: Rows do not add to 100 percent because some schools did not respond to the survey question or said they did not know the answer.

^aPrograms completed by students who earned an academic degree (e.g., Associate of Arts or Associate of Science) or transferred to an institution that offers baccalaureate degrees.

To some extent, the difference in community colleges' and technical schools' data collection for credit and noncredit programs reflects the extent to which such data are needed to meet federal and state reporting requirements. For example, a community college official in Oregon said that his community college collects and reports student completion and graduation rates for credit courses to meet eligibility requirements for participation in federal student aid programs, but the school is less likely to collect such information for noncredit courses. In the absence of specific federal requirements to collect and report outcome data, some states have developed outcome measures for noncredit programs, but these outcome measures may differ from those used to measure credit programs. Community college officials from North Carolina, for example, said that most student outcome measures, including those required by the state, are focused on credit courses, and the success of noncredit programs is measured by conducting satisfaction surveys of businesses whose employees have attended classes.

While less than half of community colleges and technical schools measured outcomes for noncredit occupational, professional, or technical training programs, they were much more likely to measure outcomes for students enrolled in noncredit remedial courses (such as mathematics, English, or reading) or basic skills courses (such as English as a Second

Language). As table 4 shows, community colleges and technical schools were more likely to report education outcomes for students, such as enrollment in college-level programs and degree attainment, than outcomes related to employment and wages.

Table 4: Percent of Community Colleges and Technical Schools Tracking Four Types of Outcomes for Students Who Completed below College-Level (Remedial) and Basic Skills Courses and Percent of Responding Schools That Provided Data

Type of student	Type of outcomes tracked/percent of responding schools that provided data			
	Enrollment in college-level programs	Degree attainment	Employment status	Wages
Below college-level (remedial)	65/96	37/91	10/88	6/87
Basic skills	56/90	27/85	30/87	7/83

Source: GAO survey of community colleges and technical schools, 2004.

Community colleges and technical schools used several different methods to collect education and employment data for students who had been enrolled in academic and occupational, professional, or technical training programs but, as table 5 shows, relied most heavily on student self-reported data obtained through follow-up surveys for each type of program. Many community colleges and technical schools supplemented this data source for education and employment outcomes by obtaining data from institutions students had transferred to and, to a much lesser extent, tracking unemployment insurance wage data.

Table 5: Percent of Community Colleges and Technical Schools That Used Each of Three Methods to Track Outcomes for Students Who Completed Three Types of Programs

Type of program completed	Tracking mechanism		
	School conducted student follow-up surveys	School tracked unemployment insurance wage data	School collected data from educational institutions on students who had transferred
For-credit academic	72	14	54
For-credit occupational, professional, or technical training	80	18	45
Noncredit occupational, professional, or technical training ^a	34	7	4

Source: GAO survey of community colleges and technical schools, 2004.

Note: Rows do not add to 100 percent because schools may be using more than one tracking mechanism.

^aBetween 86 and 88 percent of survey respondents provided data for noncredit occupational, professional, or technical training programs.

While many community colleges and technical schools reported measuring both education and employment outcomes through student surveys, one study showed that the specific performance measures that individual states require their schools to report on differed substantially from each other.¹⁹ The Education Commission of the States reported in November 2000 that 27 states required community colleges to report on performance measures and indicated that each state required schools to use a different set of measures. While 19 states had no performance measures in use or under development, others used more than 30. The most common performance measures (rates for graduation, certificates and degrees awarded, transfer to 4-year institutions, and job placement) were required in only 16 or 17 states.

¹⁹Education Commission of the States, *State Funding for Community Colleges: A 50-State Survey*, Denver, Colorado: November 2000.

While methodological differences preclude aggregating performance data for national use, 6 states we visited or contacted required community colleges to report on specific performance measures. The Texas Higher Education Coordinating Board, for example, collected information on student pass rates from agencies and professional organizations responsible for administering 45 licensure/certification examinations, including aircraft mechanic, court reporter, and nuclear medicine technician.²⁰ These licensing examination pass rates were used as part of the Board's overall assessment of the effectiveness of vocational education programs at community and technical colleges in the state. Similarly, for 15 years the North Carolina Community College System has annually published school performance measures for purposes of accountability and performance funding and for use in evaluating the College System's strategic plan.²¹ In February 1999, the North Carolina Board of Community Colleges adopted 12 performance measures for accountability, including pass rates on licensure and certification examinations, employment status of graduates, pass rates of students in developmental courses, as well as employer satisfaction with graduates.

Data Collected under Federal Programs Are Not Representative of Outcomes for All Students and Schools

The federal government has some reporting requirements for measuring education and employment outcomes across schools and states, but these requirements sometimes pertain only to participants in a federal program and results may not be nationally representative of all community college students and schools. For example:

- Postsecondary institutions eligible for federal student aid are required to disclose completion or graduation rates and transfer rates of first-time, certificate- or degree-seeking, full-time students who begin their studies in the fall term. These data are collected annually by the National Center for Education Statistics through its Integrated Postsecondary Education Data System. Outcome data from community colleges and technical schools that do participate in this annual survey are not representative of student outcomes as a whole because most students do not fall under the reporting requirement. For example, in the 1999-2000 school year, only

²⁰Texas Higher Education Coordinating Board, Community and Technical Colleges Division, *2003 Statewide Annual Licensure Report*, August 2003, Austin, Texas.

²¹The College System has issued performance reports each year since 1990. For the most current report, see North Carolina Community College System, Planning, Accountability, Research & Evaluation, *2004 Critical Success Factors for the North Carolina Community College System, Fifteenth Annual Report*, June 2004, Raleigh, North Carolina.

about a third of community college and technical school students attended school full-time.²² A community college in Washington, for example, estimated that less than 20 percent of students who entered school in fall, 1996, were included in the IPEDS reporting requirements.

- The Carl D. Perkins Vocational and Technical Education Act provide grants to states to help provide vocational-technical education programs and services to youths and adults at the secondary and postsecondary level. Under the Perkins Act, states are required to develop measures of student performance such as competency attainment, job or work-skill attainment, and retention in school or placement in a school, job, or the military. Our survey showed that less than three-fourths of community colleges and technical schools reported receiving vocational education funds and would, therefore, be required to report such outcomes. Further, while several states have created data links between unemployment insurance earnings information and community college administrative records to collect earnings data, each state varies in its ability to collect such data because state laws, reporting procedures and higher education agency organizations differ by state.
- Job training programs under Title I of the Workforce Investment Act require states and localities to track participant performance. The performance measures gauge program results in areas of job placement, employment retention and earnings changes, as well as skill attainment and customer satisfaction. Our survey results, however, showed that only 27, 62, and 63 percent of community colleges and technical schools reported participating in WIA Youth, Adult Education and Dislocated Worker programs, respectively, and are thus subject to these reporting requirements. In addition, as we previously reported, these data are not comparable across states for a variety of reasons.²³

²²U.S. Department of Education, National Center for Education Statistics, *Descriptive Summary of 1995-1996 Beginning Postsecondary Students: Three Years Later* (NCES 2000-154) L. Becker, L. Horn, M. Clune. Washington, D.C.: 2000 and U.S. Department of Education, National Center for Education Statistics, *Nontraditional Undergraduates* (NCES 2002-012) Susan Choy. Washington, D.C.: 2002.

²³See GAO, *Workforce Investment Act: Improvements Needed in Performance Measures to Provide a More Accurate Picture of WIA's Effectiveness*, [GAO-02-275](#) (Washington, D.C.: February 1, 2002).

National Studies of Credit Programs Indicate that Over Half of Community College Students Meet Their Goals

Given the differences in outcome data collection efforts by schools, states, and federal programs, the most reliable data on community college student outcomes flow from national studies conducted by the National Center for Education Statistics. National data are unavailable showing education and employment outcomes for students enrolled in noncredit occupational programs. However, NCES has conducted several studies that provide some insight on the extent to which community college students who are enrolled in accredited academic and occupational programs meet their educational or employment goals. An NCES report issued in June 2003 draws upon three earlier studies to provide data on student outcomes based on representative samples or cohorts of students that attended community colleges.²⁴ The findings of this report suggest that the national success rate for community college students, as measured by transfer to a 4-year institution or completion of a degree or certificate, is between half and two-thirds of students who enroll with intentions to transfer or earn a credential. For example:

- Results from one study showed that 51 percent of community college students seeking some type of academic credential either received a degree or certificate (39 percent) or transferred to a 4-year institution (12 percent) within 6 years of initiating their studies.²⁵
- A second study²⁶ found that for a group of 1992 high school graduates that enrolled in public 2-year institutions by December 1994, 63 percent of students seeking an academic credential either received a degree, certificate, or license (50 percent) or had attended a 4-year institution (13 percent) as of 2000.

Both studies asked students who did and did not achieve their goals to assess the impact of their postsecondary education on a variety of labor market outcomes. Results showed that students who completed a degree or certificate were more likely to say that their postsecondary education

²⁴U.S. Department of Education, National Center for Education Statistics, *Community College Students: Goals, Academic Preparation, and Outcomes*, NCES 2003-164 by Gary Hoachlander, Anna C. Sikora, and Laura Horn. Project Officer: C. Dennis Carroll. Washington, D.C.: 2003.

²⁵U.S. Department of Education, National Center for Education Statistics, *1996/01 Beginning Postsecondary Students Longitudinal Study*, (BPS: 96/01).

²⁶U.S. Department of Education, National Center for Education Statistics, *National Education Longitudinal Study of 1998 (NELS:88/2000)*, "Fourth Follow-up, 2000, Data Analysis System."

increased their employment prospects (job opportunities, job responsibilities, or salary) than those who left without obtaining a credential.

In 1995, NCES conducted a survey on remedial education in higher education institutions and found that about two-thirds or more of community college students successfully completed remedial courses taken in reading (72 percent), writing (71 percent), and mathematics (66 percent).²⁷ Our recent survey of community colleges and technical schools found similar results, as shown in table 6, for both remedial and three types of basic skills courses.

Table 6: Percent of Students Passing below College-Level (Remedial) and Three Types of Basic Skills Courses during Fall Term of 2002 and Percent of Responding Schools with that Type of Course that Provided Data

Type of course	Median percent of students passing/percent of responding schools that provided data
Below college-level (remedial)	66/95
Adult Basic Education (ABE)	60/82
English as a Second Language (ESL)	71/85
General Educational Development (GED) examination preparation	65/85

Source: GAO survey of community colleges and technical schools, 2004.

Concluding Observations

Community colleges and technical schools are playing an important role in helping to build and sustain the U.S. workforce. In the coming decade, this role may take on greater importance as both the demand for educated and trained workers and the number of Americans needing additional education and training to escape poverty continue to increase. These institutions can adapt quickly to changing local economic needs, in part, through noncredit programs and contract training that offer both individuals and employers an array of education and vocational experiences needed to support shifting workforce demands. At the same time, these schools are maintaining their position as a critical vehicle for students seeking 2-year degrees or moving on to 4-year institutions.

²⁷U.S. Department of Education, National Center for Education Statistics, *Remedial Education at Higher Education Institutions in Fall 1995*, (NCES 97-584) Washington, D.C.: 1996.

National studies conducted by the Department of Education provide some information about community college student outcomes for those enrolled in these degree programs. However, much less is known about the outcomes of contract and noncredit training initiatives—and because many of these efforts are customized to meet specific local employer needs, national studies may not be the most appropriate methodology. Rigorous, localized research studies may provide information about the extent to which these efforts are addressing the needs of local economies and the employers and workers in them.

Agency Comments

We provided a draft of this report to the Departments of Education, Health and Human Services, and Labor for their review and comment. The Departments of Education and Labor had no comments on the report. The Department of Health and Human Services provided technical comments, which we incorporated as appropriate.

We will send copies of this report to the Secretaries of Education, Health and Human Services, and Labor; to appropriate congressional committees; and to other interested parties. In addition, the report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions or wish to discuss this material, please call me at (415) 904-2272 or Cindy Ayers at (206) 654-5591.

Sincerely yours,



David D. Bellis
Director, Education, Workforce,
and Income Security Issues

Appendix I: Objectives, Scope, and Methodology

In conducting our work, we administered a Web-based survey to all public, regionally accredited, less than 4-year institutions throughout the country; conducted telephone interviews of community college experts and relevant associations; visited 3 states; and interviewed representatives from a fourth state by telephone. We also interviewed officials at the Departments of Education, Health and Human Services, and Labor, and reviewed existing data and literature to gather what is known about community colleges and technical schools, their outcomes and the policies and funding sources that support academic preparation and workforce development at these schools. We relied on the findings of national outcomes studies regarded to be authoritative by researchers and other experts in the field. A social science analyst examined each study to assess the validity and reliability of selected results for use as evidence in this report. We examined descriptive information from the National Center for Education Statistics, including the Beginning Postsecondary Students Longitudinal Study and the Digest of Education Statistics. The American Association of Community Colleges and the Association for Career and Technical Education provided letters of support for our national survey. We conducted our work from May 2003 to August 2004 in accordance with generally accepted government auditing standards.

The Survey

To document the academic preparation and workforce training programs offered by public community colleges and technical schools, the students they serve, the education and employment outcomes of former students in these programs and efforts to measure outcomes, as well as to obtain information on the state policies and federal funds that support schools' workforce development activities, we conducted a Web-based survey of all public, regionally accredited, less than 4-year institutions throughout the country and received a 71 percent response rate.²⁸ We sent the survey to keyholders of the Integrated Postsecondary Education Data System, and asked them to coordinate responses with school officials most knowledgeable about particular issues raised in the survey. While we did not independently verify the accuracy of the self-reported information provided by these schools, we took a series of steps, from survey design through data analysis and interpretation, to minimize potential errors and problems. We analyzed the survey data by calculating descriptive statistics of community colleges and technical schools.

²⁸We received responses from 758 of the 1,070 public community colleges and technical schools in our survey population.

The Study Population

We used 2000-01 data from the Department of Education's Integrated Postsecondary Education Data System to identify the study population. Education administers IPEDS surveys to collect data from all primary providers of postsecondary education. In order to identify our study population of 2-year public community colleges and technical schools from this list, we systematically eliminated the records of institutions that were inactive, that were private, that offered 4-year degrees, and that were not regionally accredited. There were 1,070 institutions that met these criteria and that became our study population. We assessed the reliability of the IPEDS database through a review of related documentation and by conducting electronic checks, and we found it to be sufficient for the purpose of identifying the study population.

Developing the Survey

To identify potential questions, we spoke with numerous researchers as well as officials at organizations relevant to community colleges and technical schools, including the American Association of Community Colleges, Association for Career and Technical Education, Community College Research Center, League for Innovation in the Community College, National Governors Association, National Association of Manufacturers, and the US Chamber of Commerce, among others. During these discussions, we focused on (1) the general categories of programs offered by community colleges and technical schools; (2) various measurements of the extent of a school's offerings in a given program category; and (3) limitations of existing data on community colleges and technical schools and areas for further exploration. We received formal endorsement for our survey from the American Association of Community Colleges and the Association for Career and Technical Education through letters of support to their member institutions encouraging participation in our forthcoming survey. In addition, throughout our survey design, we sought feedback on the questionnaire from community colleges and technical schools themselves, many of which participated in various survey pretests and a full-scale pilot survey test sent to a small random sample of 12 community colleges and technical schools that represented different sizes and levels of state support in November 2003.

Administering the Survey

We conducted the survey between February and May 2004 via the World Wide Web. We sent a link to the survey via e-mail to the IPEDS keyholder at each of the schools. IPEDS keyholders are responsible for responding to the IPEDS surveys. We obtained the e-mail addresses of these keyholders from the IPEDS database.

Nonsampling Error

The practical difficulties of conducting any survey can result in nonsampling errors. For example, measurement errors can be introduced if respondents have difficulty interpreting a particular question, if they do not have access to information necessary to answer a particular question, or if they make errors in navigating a Web-based questionnaire. In order to minimize these errors, we conducted in-depth pre-testing of the questionnaire with IPEDS keyholders and their designees. During these pretests, we assessed the extent to which questions and response categories were interpreted in a consistent manner, the length of time needed to complete the survey, and the extent to which respondents had information available to answer our survey questions. In addition to conducting pretests, we performed computer analyses of completed questionnaires in order to identify obvious errors and internal inconsistencies among responses. Depending upon the extent of a particular error, we either corrected responses or deleted responses altogether. Finally, all computer syntax used to both identify inaccurate responses and to calculate summary statistics presented in this report was verified by independent programmers to ensure that it was written and executed correctly.

Response Rates

We took several steps to maximize response rates. We sent our study population two follow-up email messages, one on February 26, 2004, and the other on March 8, 2004. Each of these messages contained instructions for completing the survey and contact information to submit questions. We extended the initial deadline from March 12, 2004, to May 7, 2004, in order to allow additional institutions to submit completed questionnaires. Finally, we hired contractors to telephone institutions that had not yet responded between April 6, 2004, and April 13, 2004, to remind them to complete the questionnaire.

Of the 1,070 questionnaires sent to our study population, we received 758, for a total response rate of 71 percent. In spite of this overall response rate, many of the questionnaires were incomplete with item response rates ranging from 51 to 100 percent. Because we found evidence of pre-existing differences between respondents and nonrespondents and excessive missing data on some questions, we did not use the survey data to generalize to the entire study population. Rather, our conclusions reflect the responses of those who participated in the survey and provided substantive answers to our questions. We noted in the report the number of responses to any questions with item response rates less than 90 percent.

Site Visits

We supplemented our survey data with in-depth information from state officials and community colleges and technical schools in Florida, North Carolina, Texas, and Washington. We chose these states based on recommendations that considered factors such as credit and noncredit course funding, outcome tracking, workforce development efforts, and geographic location. We interviewed a variety of officials from state education and labor agencies in order to understand the unique interplay between community colleges and technical schools and workforce development programs and policies at the state and local levels. We also examined two or more schools in each state, except for Texas where we visited one, basing our decisions on recommendations from community college, technical school, and workforce experts; school enrollment; and locale. In addition, we visited community colleges in four other states—California, Maryland, Oregon and Virginia—to pretest the survey. In all, we pretested the survey at 14 schools in 6 states across the country, which included a mix of community colleges and technical schools, and an adult education center.

Appendix II: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Staff Acknowledgments

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