

The newly released 2004 National Assessment of Vocational Education (NAVE) includes an Executive Summary, references, a listing of the Independent Advisory Panel members, and NAVE Study Reports to be released in 2004. The NAVE examines the organization, access and participation, implementation, and the outcomes and effects for secondary, postsecondary and Tech-Prep programs. Below highlights key findings and other information from the NAVE final report to Congress. In addition, specific citations on various topics (state leadership, state admin, Career Clusters), along with the page numbers for easy reference, are listed. The end of the document lists the tables and figures available in the report. The full report is available at:

<http://www.ed.gov/rschstat/eval/sectech/nave/navefinal.pdf>

Chapter 1: Introduction

- A. 1998 Perkins Act: key changes, continuity with the 1990 Perkins Act, unresolved policy debates
- B. Context for Evaluating Federal Support for Vocational Education
- C. National Assessment of Vocational Education: the Independent Advisory Panel, research objectives and questions, evaluation strategies and limitations
- D. Overview of this Final Report to Congress

Chapter 2: Secondary Vocational Education

Key findings:

- Over the last decade, vocational students have made significant academic progress—both in achievement and the number of credits—although there is little evidence that vocational course taking is responsible for these promising outcomes.
- Vocational courses probably neither hurt nor help students' chances of entering or completing postsecondary education.
- The benefits of vocational education are clearer when examining its most longstanding measure of success—earnings.
- Secondary vocational education is a large component of high school course taking but an increasingly smaller share of the overall curriculum.
- Vocational education students represent a diverse group, including those from special populations.
- Implementation of Perkins improvement strategies is progressing, with wide variation in their intensity.
- Vocational education is responding to state academic reforms, with more consensus and action at the state than local levels so far.
- Changes in participation by occupational program are consistent with labor market trends.
- Vocational education may be attracting more academically talented students than ever before.
- Articulation and “dual enrollment” programs are becoming more common, but few vocational students are taking advantage of these options.
- Educators report interacting with local employers in a variety of ways, but they play a limited role in shaping vocational programs.
- Vocational teachers are more likely to have industry experience but continue to be less academically prepared.

- There is mixed evidence that participation reduces a student’s likelihood of dropping out of school.

Chapter 3: Postsecondary Vocational Education

Key findings:

- Postsecondary vocational education provides economic benefits to most participants, with the minority who earn a credential reaping the greatest benefits.
- Postsecondary vocational education serves a large, diverse population with varied needs and objectives.
- Some Perkins improvement strategies are consistent with vocational education practice in postsecondary institutions, but the extent to which Perkins “drives” these strategies is unclear.
- Community and technical colleges had limited involvement in the early implementation of the Workforce Investment Act (WIA), citing low emphasis on training and reporting requirements as disincentives.
- Enrollments in vocational associate degree programs appear to respond somewhat to shifts in the labor market.
- Differences in Perkins and WIA accountability measures and the extensive recertification requirements are a disincentive for community colleges to participate in workforce systems.
- Whether small amounts of postsecondary vocational coursework without retaining a credential is beneficial depends on gender.

Chapter 4: Tech-Prep Education

Key findings:

- Reported participation in Tech-Prep measures diverse student experiences; thus, increases in student counts should be viewed cautiously.
- Access to and funding of Tech-Prep do not reflect the Perkins Act’s targeting criteria.
- Tech-Prep is rarely implemented as a comprehensive program of study; implementation focuses on individual components of Tech-Prep, some of which are becoming more common in vocational education in general.
- Tech-Prep and non-Tech-Prep students attend college at roughly comparable rates.

Chapter 5: Program Management: Funding and Accountability

Key findings:

- The new law succeeded in sending a higher share of funds to the local level.
- States are taking advantage of the law’s flexible funding options.
- Targeting of funds to districts with the highest concentrations of poverty has declined somewhat over time.
- Little has changed under Perkins III in how local grants are spent.
- Federal funding represents a fraction of overall spending on vocational education.
- The quality of Perkins performance reporting varies considerably by indicator, by state, and sometimes even within states.

- Early state performance results show significant variation in how high performance target levels were set but consistency in meeting those targets.
- At least so far, most state and local administrators do not view Perkins III data as useful for program management and improvement.

Chapter 6: Conclusions and Potential Future Directions for the Perkins Act

Options for Future Directions

- Broad strategies for promoting change
Policy Options: Focus Perkins legislation more clearly, Eliminate Tech-Prep, Streamline accountability requirements
- Specific strategies for improved performance
Policy Options (secondary): Promote curriculum change and teacher training, Encourage standards-based reform of vocational education, Emphasize vocational program sequences and work experience for non-college bound students
Policy Options (postsecondary): Increase credential attainment to promote earnings

STATE LEADERSHIP

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Implementation of Perkins improvement strategies is progressing, with wide variation in their intensity.

Perkins III carried over program improvement strategies from Perkins II, several of which are being emphasized in high schools and area vocational centers nationwide. For example, articulation agreements and technology upgrades are growing. Integration of academic and vocational education remains a priority at the state level (accounting for nearly one-fifth of **state leadership funds** nationally) and is increasing locally, but is still neither broadly nor deeply implemented.

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State agencies, as encouraged by Perkins, continue to place priority on forms of integration.

For the most part, state vocational officials support the concept of integration and state level activities that promote it. They sponsor professional development conferences and curriculum development efforts and disseminate relevant products. Many states adopt or support particular vocational reform models that advocate integration as a key component, such as the Southern Regional Education Board's (SREB) High Schools That Work (HSTW) initiative or career academies (Stasz and Bodilly forthcoming). Most importantly, states have begun to reference or encourage academic content in vocational course guidelines, as discussed in more detail below. States spend the highest share of **state leadership funds**—nearly 20 percent nationally—to promote integration (White et al. forthcoming).

** Integration is, for example, mentioned as a core strategy for addressing the purpose of the law (Section 2).

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2. Linkages between Secondary and Postsecondary Education

Along with integration, Perkins III emphasizes the linking of secondary and postsecondary education as a way to fulfill the purpose of the act (Section 2). Such efforts were expected to have two benefits: to improve the quality of secondary vocational education and to provide students with encouragement and incentive to pursue college and advanced training. In practice, these linkages have included collaborations between secondary and postsecondary faculty, arrangements that allow high school students to earn college credit, and various forms of career development and planning.

While Title II, the Tech-Prep Education Act, is the main vehicle in Perkins III for developing these linkages (discussed in Chapter 4), the law encourages strengthening connections across levels more broadly. Many of the components of Tech-Prep, for example, are allowable activities under state and local uses of the basic state grant. State officials spend about 11 percent of basic grant **state leadership funds** on promoting secondary-postsecondary linkages (see Chapter 5).

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College and career planning activities are widely available in schools, but their utility is uncertain.

Perkins III supports career development efforts in a variety of ways. Most directly, Perkins funds a state network of entities—now called “America’s Career Resource Network” (ACRN)—that gathers and provides schools with information on occupations and employment (Section 118). States are permitted to use **state leadership funds** to improve career guidance, and about 9 percent of these funds nationally are used for these purposes (see Chapter 5). Unlike Perkins II and its predecessors, however, the 1998 law does not set aside funds specifically for career counseling and development activities; instead local districts are free to use their Perkins grants for those activities.

In part because of the emphasis on these activities in prior Perkins legislation and the School-to-Work Opportunities Act of 1994, many career development activities are being offered in American high schools, and some practices appear to be growing (Table 2.15). Job shadowing and worksite visits were particularly emphasized in school-to-work implementation (Hershey et al. 1999), so it is not surprising to find these activities increasingly prevalent in the latter part of the decade.

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Perkins has substantial influence on expanding and upgrading technology and equipment.

In many ways, Perkins III has its most direct effect on this area of program improvement. At the local level, the majority of Perkins funds are spent on upgrading equipment and instructional materials to keep them current (see Chapter 5), as are a substantial share of Tech-Prep funds (Hershey et al. 1998). Moreover, state officials spend about 11 percent of their **state leadership funds** on expanding the use of technology (White et al. forthcoming). States have made the expansion, development, and use of technology in education a priority, although much of this effort is not specific to vocational education. In fact, many state technology policies apply to all students or represent efforts not necessarily connected to vocational education (Stasz and Bodilly forthcoming). For example, initiatives such as the “Digital High Schools” in California or “Virtual High Schools” in Florida are not targeted to students interested in technology careers or intended to be more than strong academic programs, even with a technology emphasis. High schools in general have sought to ensure computer access for all students. Vocational courses may or may not benefit from these efforts.

pp. 83-84

Vocational teachers receive professional development on topics consistent with federal policy, most of it provided by state agencies with Perkins funds.

Professional development remains an important strategy to improve vocational education. According to case studies, teachers indicate that state agencies rather than districts or schools are the main providers of training. Such an emphasis is not surprising, given that professional development is a required state activity under Perkins III, and nationally states report spending approximately one-quarter of all **state leadership funds** on these activities (White et al. forthcoming).

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Limited linkages exist between secondary and postsecondary education.

Community colleges have played active roles in developing and updating articulation agreements as part of Tech-Prep, but few of them have actually changed their offerings or

activities as a result of this initiative (see Chapter 4). Other types of coordination, such as outreach activities—e.g., bringing students to campus and arranging meetings between college and high school personnel to discuss student test scores and required preparation for college—are generally low intensity (Hudis, Blakely, and Bugarin forthcoming). Perkins-funded **state leadership spending** at the postsecondary level suggests that secondary-postsecondary linkages (7.7 percent of these funds nationally) are not as high a priority as other activities (e.g., more than 15 percent of state leadership funds are used for each of these efforts: upgrading technology, integration, and data reporting; White et al. forthcoming).

Curriculum integration remains relatively rare at the postsecondary level, despite continued emphasis in the law and reported state activities. Certainly, some states and community colleges are using Perkins funds for faculty workshops on integrating curriculum. Nationally, strengthening integration of academic and vocational content is one of the top two expenditure categories of **state leadership funds** (15.3 percent). For example, Michigan awarded grants to produce new curricula, and Florida is developing new certificate programs that require an integrated course curriculum. One Michigan grant, for example, brought together 80 faculty members from 15 community colleges to work on producing integrated curricula that they could use in classrooms. California has also used state leadership funds to support statewide conferences and workshops on curriculum integration. However, these efforts have not translated into widespread action. According to site visits, most community colleges and their faculties lack the curriculum materials or professional development opportunities to achieve meaningful integration (Hudis, Blakely, and Bugarin forthcoming).

pp. 200-203

A. Overview of Perkins Funding and Accountability Provisions

Perkins III reflects a trend in federal legislation toward greater flexibility in program funding and implementation in exchange for stricter emphasis on performance. Although many aspects of program management remain the same as under the previous law, some important modifications were made in Perkins III.

pp. 200-203

1. Perkins Funding

In many respects, the basic framework for federal vocational funding did not change when Perkins was modified in 1998 (Table 5.1). Each state receives a grant from the U.S. Department of Education (ED), based on population counts in several age categories. State agencies then allocate much of their grant to local programs, with the discretion to determine the share of Perkins funds allocated to institutions at the secondary versus postsecondary levels. Funds dedicated to secondary vocational education are distributed to secondary districts based largely on their proportion of low-income youths; money for postsecondary vocational education is distributed to community colleges and other eligible postsecondary institutions based largely on their share of Pell grant recipients.

The compensatory nature of the funding formulas reflect both a desire to ensure equal access to vocational education and the reality that such courses and programs are often more costly to provide—perhaps by as much as 20 to 40 percent—than programs in most other subject areas.(footnote 1)

However, significant changes were made to Perkins III to further the goals of flexibility and increased local resources, including the following:

- Elimination of the set-aside funding streams for “special populations” (e.g., single parents, displaced homemakers, pregnant teenagers); a state gender equity coordinator; (footnote 2) and requirements that local education agencies target funds to schools and programs with the greatest concentrations of special populations.
- Increase in the share of funds for local programs (from 75 percent in Perkins II to 85 percent in Perkins III).

¹ Based on a review of national and state finance data, Klein (2001, p. 28) estimates the cost of providing vocational instruction as 20 to 40 percent higher than the cost of providing academic instruction. While salaries for academic and vocational instructors may be about the same, vocational class sizes are considerably smaller and equipment expenditures are higher.

² However, Perkins III mandates that \$60,000–150,000 of **state leadership funds** be used for services that prepare individuals for nontraditional training and employment.

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Table 5.1

Perkins III Funding Provisions

State leadership funds: Yes, a significant change from Perkins II – III. Perkins III increased the amount from 8.5 percent to 10.0 percent and added more required and permissible activities.

1. Basic Allocations and Use of Flexibility Provisions

Local grants made under the Perkins Act are shaped by a combination of legislative specification and state choices. The law mandates the local funding formula and the maximum proportion of the state allocation that can be retained for state administration (5 percent) and **state leadership** (10 percent). However, Perkins III includes several provisions that allow states and local grantees flexibility in distributing grant funds.

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States spread their leadership funds to support a wide variety of required state activities.

Funding for **state leadership activities** was increased from 8.5 percent of the state allocation under Perkins II to 10 percent under Perkins III, partly to offset the elimination of the set-asides for gender equity activities. However, of the state leadership funds, \$60,000 to \$150,000 must be used to serve individuals preparing for nontraditional training and employment, and up to 1 percent can be set aside for vocational education in state correctional institutions. The remaining funds must be used for eight required leadership activities and may be used for 12 additional activities. When calculated as 10 percent of state allotments, the amounts available for state leadership in 2001 ranged from \$421,492 in small states to just over \$12 million in a large state like California (Table 5.2).

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Table 5.14

Percentage of Perkins State Leadership Funds Spent for Secondary Vocational

Education, by Activity: 2001

Activity	% of State Leadership Funds*
Strengthening the integration of academic and vocational instruction	19.5
Improving data reporting and accountability	13.5
Expanding the use of technology in vocational programs	10.9
Promoting linkages between secondary and postsecondary vocational education	10.9
Supporting career guidance and counseling	8.5
Supporting programs for special populations leading to high-skill, high-wage careers	7.7
Preparing individuals for nontraditional training and employment	7.2
Supporting career and technical student organizations (formerly VSOs)	6.7
Other	15.1

* The percentages of **state leadership funds** were weighted by the amount of **state leadership money** (10 percent of the state allocation) available for the 26 states that reported this information.

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1. Basic Allocations and Use of Flexibility Provisions

State and local grantees face the same legislated requirements and choices for postsecondary vocational education as they do for secondary vocational education. As indicated in the previous section, the law mandates the local funding formula; it also specifies the maximum proportion of the state allocation that can be retained for **state administration** (5 percent) and **state leadership** (10 percent), amounts that must accommodate the oversight of both secondary and postsecondary grant making. Perkins III also includes funding options that states can take advantage of at the postsecondary level.

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2. Use of Funds

The legislated list of required and permitted activities and uses of funds applies to postsecondary efforts as well as those targeted to the secondary level. For postsecondary grantees, too, Perkins III emphasizes improving programs rather than just maintaining them.

Like the funds directed at the secondary level, state leadership funds used for postsecondary vocational education are spread widely across activities.

According to a survey of state directors, Perkins funds spent on postsecondary state leadership activities were dispersed across the required activities specified in the law and a small set of permissible activities (Table 5.21).^{*} The top three uses of **state leadership funds**—expanding technology, strengthening integration, and improving accountability reporting—are consistent with the priority uses at the secondary level (see Section B). Case studies found that, in particular, a large share of postsecondary leadership funds were supporting the salaries of staff helping to develop and implement data-reporting procedures and systems (White et al. forthcoming).

Promoting nontraditional training and employment is a relatively prominent part of state postsecondary efforts, with over 8 percent of postsecondary **state leadership funds** being

spent on these activities. Eighteen states have a gender equity coordinator working at least part-time on these activities at the postsecondary level (Table 5.22).

*As noted in Section B, funding for **state leadership activities** increased from 8.5 percent of the state allocation under Perkins II to 10 percent under Perkins III, with a requirement that \$60,000 to \$150,000 be used to support individuals preparing for nontraditional training and employment and up to 1 percent be set aside for vocational education in state correctional institutions. When calculated as 10 percent of state allotments, in 2001 the amounts available for **state leadership** ranged from \$421,492 in small states to just over \$12 million in a large state like California (Table 5.2).

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Table 5.21

Percentage of Perkins State Leadership Funds Spent for Postsecondary Vocational Education, by Activity: 2001

Activity	% of State Leadership Funds*
Expanding the use of technology in vocational programs	17.9
Strengthening the integration of academic and vocational instruction	15.3
Improving data reporting and accountability	15.1
Supporting programs for special populations leading to high-skill, high-wage careers	12.9
Preparing individuals for nontraditional training and employment	8.2
Promoting linkages between secondary and postsecondary vocational education	7.7
Supporting career guidance and counseling	5.8
Supporting career and technical student organizations (formerly VSOs)	2.3
Other	14.8

* The percentages of **state leadership funds** were weighted by the amount of **state leadership money** (10 percent of the state allocation) available for the 26 states that reported this information.

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2. Early Performance Results

Responding to the new accountability provisions in Perkins III was a major activity for most state vocational officials and for many at the local level. States reported that improving data reporting and accountability was the second highest target of Perkins **state leadership funds** at both the secondary level (13.5 percent of all such funds nationally) and the postsecondary level (15.1 percent nationally) in 2001 (Tables 5.14 and 5.21). These figures may have reflected the focus in 2001 on reporting the first year of performance progress to ED under the new law.

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States vary considerably in what they report spending on their accountability systems, with no clear relationship between the population size of a state and reported costs.

Most states reported collecting at least some of the Perkins III data before the passage of the law, but most also reported needing to make substantial adjustments or additions to meet the

new requirements (White et al. forthcoming). These changes resulted in new investments in data systems, training of staff, or sometimes reassignment of staff to accountability functions. As noted earlier, state officials reported spending 13.5 percent of Perkins **state leadership funds** at the secondary level and 15.1 percent of those funds at the postsecondary level on improving data collection and accountability.

STATE ADMINISTRATION

p. 201

Table 5.1

Perkins III Funding Provisions

State administration funds: No significant change from Perkins II - III
A limit of 5 percent (or \$250,000) of the state Perkins grant for state administration.

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1. Basic Allocations and Use of Flexibility Provisions

Local grants made under the Perkins Act are shaped by a combination of legislative specification and state choices. The law mandates the local funding formula and the maximum proportion of the state allocation that can be retained for **state administration** (5 percent) and **state leadership** (10 percent). However, Perkins III includes several provisions that allow states and local grantees flexibility in distributing grant funds.

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C. Perkins State Grant Funding at the Postsecondary Level

Although there appeared to be less concern to enact major funding changes at the postsecondary level, the same philosophical principles that drove Perkins III funding provisions were applied to the postsecondary level. Congress sought to give greater flexibility in the use of funds and a higher share of funds to local grantees.

1. Basic Allocations and Use of Flexibility Provisions

State and local grantees face the same legislated requirements and choices for postsecondary vocational education as they do for secondary vocational education. As indicated in the previous section, the law mandates the local funding formula; it also specifies the maximum proportion of the state allocation that can be retained for **state administration** (5 percent) and **state leadership** (10 percent), amounts that must accommodate the oversight of both secondary and postsecondary grant making. Perkins III also includes funding options that states can take advantage of at the postsecondary level.

CAREER CLUSTERS

p. 6

Unresolved Policy Debates: Should vocational education be “education” or “training”? For the past decade, the Perkins Act has emphasized teaching about “all aspects of the industry”—focusing on a comprehensive understanding of the industry rather than just specific skills needed for an entry-level job. Although state officials are increasingly interested in broadening vocational programs into what they call “**career clusters,**” much of vocational education has been organized around traditional occupational categories

(Hoachlander 1998). In the past few years, many schools have been attracted to—and policymakers have touted—vocational programs offered by high-tech firms such as Microsoft and Cisco; to some, this emphasis on product-specific skill training seems inconsistent with the broader approaches promoted in federal policy. At the postsecondary level, the provisions of Perkins have signaled some preference for occupational programs that offer for-credit courses and culminate in an associate degree (education), as compared to short-term, noncredit training courses. But some groups who report growth in noncredit enrollments have wondered whether this federal emphasis is appropriate.

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Secondary vocational education encompasses three types of courses.

Regardless of where it is offered, secondary vocational education comprises three types of courses (top of Figure 2.1):

Specific Labor Market Preparation (“occupational education”): Teaches skills and knowledge required in a particular occupation or set of related occupations—such as health, business, and food service and hospitality—included in the 10 broad occupational program areas defined by the National Center for Education Statistics (NCES), some with subspecialty areas.³ This category includes cooperative education, in which students earn school credit for work experience related to a specific occupational program.

³ The National Association of State Directors of Career and Technical Education is currently leading an effort to reorganize occupational groupings into 16 broad **career clusters**. However, a “crosswalk” between that recategorization and national course lists for coding transcripts was not available.

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States integrate the “all aspects of an industry” approach into their reform efforts, but it does not receive much direct attention.

Both Perkins II and Perkins III called for efforts to move vocational education away from narrow occupational skills training, in part by promoting broader awareness of the careers and industries relevant to a particular vocational program. Under Perkins III, state and local grantees are required to describe in their plans how they will provide students with strong experience in, and understanding of, all aspects of an industry the students are preparing to enter (Section 122). This strategy has largely been interpreted as integrating into vocational courses such topics as planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community, environmental and social issues, and health and safety concerns.

Case studies found little evidence of the use of the term “all aspects of an industry” or initiatives that specifically promote it at the state and local levels (Stasz and Bodilly forthcoming). However, the concept seems to be embedded in other policies and strategies, most notably in state vocational curriculum guidelines where they exist. Florida’s performance standards for the introduction to agriscience, technology, and environmental science program offers one example (Table 2.12), but the same general components are included in standards for many of the state’s other programs, such as heating and air conditioning technology or commercial foods and culinary arts. Other states with curriculum guidelines also cover these dimensions of industry to varying degrees (review of state Web sites).

The “all aspects of the industry” approach is also evident in a recent initiative undertaken by state directors of vocational education to identify the competencies and skills needed for 16 broad **career clusters**, with the intent of making them available for voluntary use as skill

standards (see <http://careerclusters.org/>). Whether and how these various state-level activities influence local implementation is less clear.

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State interest in using standards and external assessments to improve vocational education is growing.

There are, of course, states that have already surmounted these challenges to some extent and others that have committed to doing so. For example, Florida and Utah have moved toward performance-based funding of vocational programs. North Carolina's test-item bank and online, secure process for assessing its programs is now being implemented (Sheets forthcoming). A large share of states report that in the next few years they intend to use accountability data to reward and sanction districts or schools for the performance of their vocational programs (see Chapter 5).

Perhaps most indicative of this movement toward using standards and assessments is the undertaking of the National Association of State Directors of Career and Technical Education. The **Career Clusters** Initiative will ultimately identify a set of knowledge and skills and related assessments for 16 broad groupings of occupations ("clusters") that states or individual programs can voluntarily adopt. Current partners in these efforts include the American Institute of Architects, the National Aeronautics and Space Administration (NASA), Sony Electronics, as well as numerous postsecondary institutions (see <http://careerclusters.org/index.htm>). Although built upon industry and existing state standards, this effort is likely to take some years to come to fruition.

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Table 4.6

Number of States Reporting Specific Approaches Must Be Used by Local Tech-Prep Consortia at the Secondary and Postsecondary Levels: 1997 and 2001

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Policy Option: Encourage standards-based reform of vocational education: NAVE Supporting Research Evidence

- At most, 16 states use statewide assessments for federal reporting on students' occupational-technical competencies; most states allow local programs and teachers to determine whether students have acquired requisite vocational skill (Chapter 5).
- State interest in developing standards and assessments is growing; the association representing state directors of vocational education is leading an effort to identify knowledge and skills for 16 **career clusters** and eventually to develop assessments for each of them (Chapter 2).

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Postsecondary Vocational Education

3. Promising Research and Evaluation Investments

Many questions about vocational education, particularly about how to improve it, remain unanswered. Given the time frame, resources, and broad set of questions given to this NAVE assessment, there is little opportunity to identify and rigorously test promising practices or programs in the field. Such efforts require focused investments and at least four

years to find sites implementing strategies of interest (or put them in place through demonstrations), design the evaluations, and collect and analyze the data. However, these types of investments might begin to build a body of evidence about what works for improving the outcomes of high school and sub-baccalaureate students and, in particular, those who pursue vocational education as a major part of their studies. Policymakers may want to consider ways to ensure that some longer-term research and evaluation activities are pursued.

Among the topics that might be considered are:

- What is the impact of well-known, and now longstanding, vocational interventions such as Tech-Prep, career academies, High Schools That Work, and cooperative education?
- What specific curriculum strategies would help strengthen the academic content and impact of vocational courses?
- Would broadening vocational courses beyond job-specific skills training, as promoted by the “**career clusters**” movement, affect the observed labor market benefits of vocational education?
- What are effective strategies for career development, and how important is it to setting high school students on a successful path?
- What constitutes a “highly qualified” vocational teacher?
- What are effective strategies for increasing postsecondary retention and completion rates at the sub-baccalaureate level?

RETURN ON INVESTMENT

p. 18

The benefits of vocational education are clearer when examining its most longstanding measure of success—earnings.

Recent studies indicate a positive average effect of vocational education on annual earnings, measured just over a year or several years after high school graduation. Seven years after graduation, for example, students earned almost 2 percent (about \$450) more for each additional high school vocational course they took, or just over \$1,350 more for occupational concentrators. These benefits appear to extend to students who go to college, to those who have economic and educational disadvantages, to those with disabilities, and to both men and women; studies differ over whether there are earnings advantages for students who *never* attend college, an increasingly small group. Students who complete the “New Basics” academic curriculum *as well as* occupational courses earn more than similar students who complete the “New Basics” and little vocational education. However, the evidence is mixed on whether earnings benefits come from students’ working more hours or from higher wages. Moreover, the medium-run earnings advantage of high school vocational education is not likely to persist over time.

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