

Career and Technical Education in the United States

AN OVERVIEW OF SECONDARY, POSTSECONDARY AND ADULT CAREER AND TECHNICAL EDUCATION

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CAREER AND TECHNICAL EDUCATION IN THE UNITED STATES. AN OVERVIEW OF SECONDARY, POSTSECONDARY AND ADULT CAREER AND TECHNICAL EDUCATION

Introduction

Career and technical education (CTE) has been offered as a formal, federally-funded part of the curriculum in secondary and postsecondary schools since the passage of the Smith-Hughes Act of 1917. This legislation was passed in response to the need for skilled workers in agriculture and manufacturing at a time when schools focused exclusively on academics (Smith, 1999). Because the apprenticeship system, which had been the primary source for producing skilled labour, was unable to keep up with the rapid pace of new technologies in these fields, the Smith-Hughes Act established a federal funding stream that supported vocational education, now called career and technical education (CTE), within the context of secondary education. As a consequence of this funding, vocational education was established as wholly separate from academics. This dichotomy persists in secondary schools today, though some teachers, administrators, and trade groups are looking for opportunities to merge academic and career and technical learning into a more unified curriculum at the secondary and postsecondary levels, and federal legislation has evolved to focus on both academic and career competencies in order to better equip students for the demands of the labour market.

Although historically CTE has emphasised preparing students for entry-level or low-skill occupations, the changing demands of the labour market have necessitated a broader approach that incorporates academic, career, and technical skills into a wide variety of CTE fields to prepare students for both further education and work. Increasingly, policymakers and researchers recognise the importance of a baccalaureate-level education in preparing students for the workforce, and federal legislation has been changed to include 4-year institutions (those that typically award primarily bachelor's degrees) with 2-year and less-than-2-year institutions, which have traditionally been the primary providers of CTE. Articulation agreements, also called "tech prep" programmes, between secondary and postsecondary schools or between 2-year and 4-year postsecondary institutions provide students with a clear pathway to further education.

This paper is designed to provide background information on CTE at the three levels in which it is delivered in the United States: secondary, postsecondary, and adult. It begins with an overview of the ways in which CTE is funded and then focuses on each CTE level to provide additional information on delivery systems, participation, programme offerings, and outcomes.

Background on Legislation and Financing

Federal funds for CTE come from the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins or Perkins IV), which took effect on 1 July 2006, and is a reauthorisation of legislation designed to improve secondary and postsecondary CTE programmes. In the 2007–08 academic year, Congress appropriated nearly USD 1.3 billion for grants to states, of which approximately USD 1.2 billion was targeted for CTE assistance to the states and about USD 104.7 million for tech prep programmes. However, federal funding is not the primary source of funding for CTE. The majority of the funds come from state and local sources. Despite this, the proverbial strings that are attached to the federal Perkins IV money require extensive reporting of a multitude of accountability measures, which ultimately has a profound role in shaping CTE.

According to nationwide study of funding approaches (Klein, 2001), there are four strategies commonly used by states to finance secondary CTE: foundation grants, unit cost funding, weighted

funding, and performance-based funding. Foundation grants are state funds that are set aside for each student in the state. The state determines their threshold per-student expenditure, then adjusts the total for each district based on characteristics of the students and financial resources in the district. This type of funding model does not set aside specific funds for CTE, rather, states often address the added costs of CTE (for supplies, equipment, and smaller class sizes, among others) by allowing local education agencies leeway in the way in which they count students, or adjusting formulas for schools that offer CTE.

In unit cost funding, state lawmakers set aside funds each year specifically for vocational education. The unit on which the allocation is based varies by state, but it is typically either the total CTE enrolment, instructional unit, or cost reimbursement. States that use the total CTE enrolment often standardise that figure by calculating the full-time equivalent (FTE) or average daily membership (ADM) enrolment. An instructional unit is calculated by dividing the number of CTE participants by the average CTE class size, which is set by the state. Finally, in the cost reimbursement approach, states either partially or fully reimburse each district for its CTE expenses.

States that use weighted funding use mathematical formulas to develop weights for CTE students, which are typically higher than those for non-CTE students due to the higher costs associated with CTE. The CTE weight is then multiplied by the number of CTE participants, which directs a larger proportion of funding to CTE.

Finally, as of 2001, two states used (and others expressed interest in) performance-based funding. These two states took disparate approaches, however: one, Indiana, awarded specific amounts for each student who earned a credential, enrolled in high-, moderate-, or less-than-moderate-demand fields, or participated in an apprenticeship programme. The other, Missouri, awarded funds based on the number of CTE teachers employed and a combination of other measures designed to measure programme effectiveness, such as the student job placement rate.

These four strategies are used in combination and are applied differently in each state. Local education agencies often have considerable discretion when it comes to awarding funds to specific schools or districts. In short, each individual school receives funds from a wide variety of sources based on many different criteria.

Secondary CTE

This section addresses some key questions about CTE at the secondary (high school) level. First, how is CTE organised and delivered? What types of programmes are offered? Who participates and to what extent? And, finally, how do CTE students fare in the labour market and postsecondary education?

Organisation and delivery

CTE courses offered at the secondary level fall into one of three categories: family and consumer science, general labour market preparation, and occupational education. Family and consumer science education (FCSE) courses teach life skills and prepare students for roles outside the labour market, while general labour market preparation (GLMP) courses encompass career preparation, work experience, and courses that teach basic workplace skills such as word processing. Occupational education consists of courses and programmes that train students for specific occupations. Although these occupational programmes are commonly considered and referred to as CTE, this paper uses the term CTE to refer to the broader definition, which includes FCSE, GLMP, and occupational education courses.

Types of high schools

CTE is delivered within secondary education in three main settings: comprehensive high schools, full-time CTE schools, and area or regional CTE schools. Comprehensive high schools are traditional American high schools that focus primarily on the academic curriculum; CTE courses may be offered in addition to, but not instead of, the academic curriculum. Full-time CTE schools provide an academic curriculum in addition to their emphasis on occupational programmes. Some of these schools are organised around an occupational or industry theme, such as aviation or fashion, or function as magnet or theme schools. The primary difference between full-time CTE schools and comprehensive high schools is that full-time CTE schools require that students select and complete an occupational programme. Finally, area or regional CTE schools provide the CTE portion of the curriculum for students at multiple comprehensive high schools. Students take their academic coursework at their comprehensive high schools and attend the area or regional CTE schools part time for their CTE coursework.

In 2002, there were approximately 18 000 public and 6 300 private secondary schools in the United States (Table 1). The majority were comprehensive high schools, though about 5% were full-time CTE schools (Levesque *et al.*, 2008). 46% of public and 4% of private schools were comprehensive high schools that were served by an area CTE school, while the remaining 49% of public and 96% of private schools were comprehensive high schools without an area CTE school. Among all students enrolled in a public secondary school in 2002, 9% were in full-time CTE schools, 42% were in comprehensive high schools served by an area CTE school, and 49% were in comprehensive high schools not served by an area CTE school.

Occupational programmes

About 88% of public high schools and 29% of private high schools (which do not typically receive federal funding for CTE) offered occupational programmes in 2002 (Levesque *et al.*, 2008). Most offered on-site courses, but about half of public schools and a third of private schools offered courses at off-site locations as well, which could include area CTE schools, postsecondary institutions, or other high schools. Public schools offered nine occupational programmes, on average, while private school offerings were much more limited: these schools offered an average of two occupational programmes. Nearly all public schools that offered occupational programmes had business (97%) and computer technology (94%) programmes (Table 2). Other common programmes included mechanics and repair (82%), precision production (79%), and construction (74%). The most popular programme among private schools with occupational programme offerings was computer technology (80%), with business (67%), child care and education (59%), and construction (56%) rounding out the top four.

Larger schools were generally more likely to offer occupational programmes and often had more programmes available to students than smaller schools (Levesque *et al.*, 2008). Rural schools were the most likely to offer occupational programmes and urban schools were the least likely to do so.

New initiatives

In recent years, secondary schools have begun to break the traditional mold—in which CTE and academic programming are kept mostly separate—in response to new initiatives encouraging broader academic and occupational preparation for new entrants to the labour force. The creation of magnet or theme schools is one way in which schools are responding; others include “schools-within-a-school,” often called career academies, which have occupational or career-related themes but are housed within and share resources with comprehensive schools, and reorganise occupational programmes or curricula into career clusters, majors, or pathways as a way to incorporate CTE into a larger programme that combines academics with applied learning.

About 90% of high schools reported, in 2002, that some of their students had created a written plan of study based on their career interests, commonly known as a career plan (Table 3). About 86% of schools reported that some of their students had selected a career major or career pathway, which is a specified set of academic and CTE courses to be taken by a student in pursuit of the training needed for a particular career. Roughly the same (85%) number of schools reported offering work-based learning opportunities for students. Work-based learning allows students to get hands-on training in a work setting while earning CTE credits. Finally, in 2004, about 22% of schools reported offering a career academy, which is a multi-year programme organised around one or more career-related themes that combines academic and CTE coursework (Table 4).

Participation in CTE

Most high school students, except those enrolled in full-time CTE schools, career academies, or other occupation-focused programmes of study, are free to choose whether to take CTE coursework and if they choose to do so, what type and how much. Nearly all (97%) of the class of 2005 took at least one CTE course, and those who did earned an average of four credits (Hudson and Laird, 2009). Most (87%) of the students in this cohort took occupational coursework, and those who did earned an average of 2.6 credits. Some 41% of students took FCSE coursework (averaging 0.4 credits), and 69% took GLMP coursework (averaging 1.0 credit). Most students combined occupational and FCSE or GLMP coursework, and the majority of students took occupational coursework in more than one programme area.

Participation in occupational programmes

The programmes in which students took occupational coursework reflected the course offerings as described above. Specifically, business was the most popular programme among students in the class of 2005; 40% of students earned credits in business (Figure 1). Other popular programmes included communications and design (30%); manufacturing, repair, and transportation (22%); consumer and culinary services (20%); and consumer and information sciences (19%). However, these were not necessarily the programmes in which students took the largest numbers of credits. Although only 12% of students in the class of 2005 earned credits in agriculture, those who did took an average of 2.0 credits in agriculture; the students who took those classes took more of them than students taking classes in other occupational programmes. Similarly “deep” occupational programmes included manufacturing, repair, and transportation or construction and architecture, in which students earned an average of 1.8 credits each, and health sciences, in which students earned an average of 1.7 credits. Students who took courses in other occupational programmes earned an average of 1.2–1.4 credits in those programmes.

Researchers and policymakers use the term occupational concentrators to distinguish students who dabble in occupational coursework from those who are using the CTE curriculum as a pathway to a specific career or occupation, which may or may not include postsecondary education. The definitions have varied over time and between organisations, but they generally set a threshold of credits that students must have completed in one occupational area. Table 5 presents data on occupational concentrators in the class of 2005. About 39% of all 2005 graduates were occupational concentrators according to the 2-credit definition, and 21% were concentrators according to the 3-credit definition. Among only graduates who earned some occupational credits, 45% were 2-credit concentrators, and 25% were 3-credit concentrators. Finally, when the analysis is restricted to students who earned at least 2.0 or 3.0 occupational credits, respectively, the corresponding percentages of occupational concentrators within that group were 67% and 54%. In other words, two-thirds of students who earned at least 2.0 occupational credits earned at least that many credits in one occupational programme, and over half of students who earned at least 3.0 occupational credits earned at least that many credits in one occupational programme. Students who earned a large number of occupational credits (at least 2.0 or 3.0 credits) tended to specialise in a particular occupational field.

Trends in CTE and occupational coursetaking

As seen in the most recent data from 2005, among the classes of 1982 and 1998, the vast majority of students earned at least some CTE credits (Levesque, 2003). This number decreased just slightly over this period from 98 to 97%. A more prominent shift took place in the average number of CTE credits that students earned, however. In 1982, students earned an average of 4.7 CTE credits; by 1998, that number had dropped by about half a credit to 4.2.

Levesque *et al.* (2008) examined trends in CTE and occupational coursetaking by analysing data for graduates in the classes of 1990 and 2005. Overall, CTE coursetaking did not change over that period. In 1990, about 98% of students took any CTE courses, and in 2000 and 2005, 97% did so. About 91% of students in 1990 and 2000 took occupational courses compared with 92% in 2005, and 21–23% of students completed an occupational concentration (defined as earning 3.0 or more credits in one occupational area) in 1990, 2000, and 2005. No changes were observed in the average number of credits earned between the three cohorts.

Some changes were observed in the types of courses taken by students in the class of 2005 compared with students in the earlier years, however. Specifically, compared with students in the graduating class of 1990, students in the later cohort earned more credits, on average, and were more likely to be concentrators in computer technology, health care, communications technology, child care and education, and protective services. Three programmes - business services, materials production, and other precision production - were less popular among the class of 2005 than among the class of 1990, in terms of both average credits earned and the percentage of students who were concentrators.

Outcomes

Dropout rates

There is mixed evidence from the research on CTE and the risk of dropping out of high school (Silverberg *et al.*, 2004). While some studies found that CTE or occupational coursetaking decreased the likelihood of dropping out, especially when the courses were taken early in a student's secondary career, others found that there was no effect or that the opposite was true.

Academic coursetaking trends

Coursetaking in the “core” academic subjects - English, mathematics, science, and social studies - increased between 1990 and 2005 for all students by about 1.8 credits (Levesque *et al.*, 2008). This is not surprising given federal policy changes over the past two decades that have emphasised the importance of academic achievement for all students and begun to hold schools, teachers, and students accountable for their performance. This sharper focus has changed the landscape of secondary education. In 1990, students who did not take any occupational coursework earned nearly 2.5 more core academic credits in high school than their peers who earned 4.0 or more occupational credits. By 2005, that gap had narrowed to just 1.2 core academic credits; students who did not take any occupational coursework averaged just over one year of additional academic coursetaking compared with their peers who earned 4.0 or more credits in occupational coursework.

About half of all 2005 graduates completed the coursework necessary to enter a 4-year college. This represents an increase from 29% of 1990 graduates, but differences were apparent between students who did and did not participate in the occupational curriculum. Although occupational participants made larger gains than their peers who did not participate in the occupational curriculum, by 2005, just 37% of those who earned 4.0 credits or more completed college-preparatory coursework compared with 62% of those who did not earn any occupational credits.

Science coursetaking

The authors of a forthcoming report examined science coursetaking among the graduating class of 2005 and found results that mirrored those presented above: occupational concentrators earned fewer credits in science than nonconcentrators (Levesque, Wun, and Green, forthcoming). Concentrators also scored lower on a science aptitude test than nonconcentrators. However, the type of occupational programme in which students participated was related to science aptitude in grade 12: those who concentrated in agriculture, business finance, communications and design, computer and information science, and engineering technology generally scored higher on the test than nonconcentrators.

Transitions to postsecondary education and the labour force

The demand for high-skill, high-wage jobs has risen in recent years, and jobs are increasingly requiring at least some postsecondary education. As a result, secondary CTE is no longer the alternative track for students who do not take the traditional academic pathway to college; it now links secondary and postsecondary education with the labour market and provides opportunities and pathways for students pursuing a variety of careers and includes those who are and are not college bound (Chen, forthcoming; Silverberg *et al.*, 2004). Academic and CTE curricula are being linked more than ever before to provide students with solid academic skills and technical training that they will need for postsecondary education and/or the labour market. Encouraging this type of unification is one of the key goals of Perkins IV, which provides federal funding for CTE as described above; the recent reauthorisation continued the shift toward an integrated academic and technical curriculum that has been emphasised in prior authorisations beginning with Perkins II (Silverberg *et al.*, 2004).

Transitions to postsecondary education

Examining students' transition from high school to postsecondary education and the labour market helps reveal the extent to which CTE meets the goals of the Perkins Act and, more generally, contributes to an understanding of the outcomes associated with CTE participation. Levesque *et al.* (2008) studied the postsecondary and labour force outcomes of students who graduated from public high schools in 1992 and found that in their last high school year, most expected to attain a bachelor's degree (48%) or advanced postsecondary degree (24%). 8% expected that their highest level of education would be the completion of a programme at a vocational, trade, or business school, and the remaining 8% did not expect to attain any education beyond high school. These results varied somewhat by occupational coursetaking; in general, as the number of occupational credits a student earned increased, his or her likelihood of aspiring to a bachelor's or advanced degree decreased. However, even though aspirations decreased somewhat among students with higher numbers of occupational credits, the largest percentage (36%) of these students still aspired to a bachelor's degree.

Enrolment

Within one year of high school graduation, 70% of the class of 1992 had enrolled in postsecondary education (Table 6). Seven years later, another 13% had enrolled, bringing the overall postsecondary enrolment rate to 83% of the 1992 graduating class. The postsecondary enrolment rate, both within one year and within eight years, was associated with the number of occupational credits that students earned. Consistent with findings from other studies (*e.g.*, DeLuca, Plank, and Estacion, 2006), Levesque *et al.* (2008) found that occupational coursetaking was negatively associated with the likelihood of enrolling in postsecondary education and, among those who enrolled, was positively associated with the length of time between high school graduation and postsecondary enrolment. In other words, students who earned occupational credits enrolled in postsecondary education at lower rates, and when they did enrol, took longer to do so than students who did not earn occupational credits.

Among all 1992 graduates who had enrolled in postsecondary education by 2000, 57% first enrolled in a 4-year institution (which typically awards primarily bachelor's degrees), and 43% began their postsecondary education in a less-than-4-year institution (which typically awards certificates or associate's degrees). Students who earned more occupational credits tended to enrol in less-than-4-year postsecondary institutions at higher rates than their peers who earned fewer occupational credits: 62% of students who earned 4.0 or more occupational credits began in less-than-4-year institutions compared with just 24% of students who did not earn any occupational credits.

Chen (forthcoming) found similar patterns among the public high school class of 2004. Within a few months of high school graduation, 69% of 2004 graduates had enrolled in postsecondary education. Occupational concentrators, defined in this study as students who earned at least 2.0 credits in a single occupational programme, were less likely to have enrolled in postsecondary education within the first few months following graduation. However, the majority of both groups (72% of nonconcentrators and 65% of concentrators) enrolled within a few months. Within two years of high school graduation, an additional 10% of the cohort had enrolled in postsecondary education, resulting in an overall enrolment rate of 79%. The enrolment rates of occupational concentrators remained behind those of nonconcentrators, however, with 74% of concentrators having enrolled compared with 81% of nonconcentrators. As was true for the 1992 cohort, the occupational concentrators who enrolled in postsecondary education were less likely than their nonconcentrator peers to have enrolled in a 4-year institution. Concentrators were also less likely than nonconcentrators to enrol part time and to work full time.

Chen found differences among concentrators in postsecondary enrolment rates by occupational programme as well. Specifically, students who concentrated in five occupational programmes—agriculture and natural resources, construction and architecture, manufacturing, repair and transportation, and consumer and culinary services—were less likely than nonconcentrators to enrol in postsecondary education both within a few months and within two years of high school graduation. Concentrators in the other seven occupational programmes examined in the study—communications and design, computer and information sciences, health sciences, marketing, business, engineering technologies, and public services—enrolled in postsecondary education at roughly similar rates to nonconcentrators.

Reflecting the type and level of institutions that offer various CTE programmes, concentrators in some fields were especially likely to enrol in 2-year or less-than-2-year institutions. Specifically, concentrators in agriculture and natural resources, construction and architecture, manufacturing, repair and transportation, consumer and culinary services, and public services enrolled in 4-year institutions at lower rates than nonconcentrators overall.

High school concentrators who graduated in 2004 demonstrated a predilection for choosing a CTE major in postsecondary education. An examination of the relationship between the field in which students concentrated in high school and their postsecondary major or occupational field revealed that for 80% of this cohort, the field in which a student concentrated was unrelated to the field in which he or she pursued a degree or a job. However, some differences were apparent by field. For example, 36% of students who concentrated in the repair and transportation field in high school pursued a similar job or postsecondary major. In addition, 28 to 29% of concentrators in health sciences, consumer and culinary services, and business pursued a job or postsecondary major that was related to their high school CTE coursework. Although relatively unlikely to choose a major in the same field as their occupational concentration in high school, nearly two-thirds of concentrators who enrolled in postsecondary education pursued a degree or certificate in some CTE field, while one-half of nonconcentrators did so.

Attainment

Among the class of 1992, students who earned occupational credits were less likely to attend college, waited longer to attend if they did, and first enrolled in institutions that awarded subbaccalaureate degrees. Not surprisingly, their rate of degree attainment was lower than that of their peers who did not take occupational education. Specifically, 61% of all 1992 public high school graduates had earned a postsecondary credential by 2000: 6% were certificates, 9% were associate's degrees, and 46% were bachelor's degrees (Table 7). Among students who did not take occupational coursework, 73% had earned some type of postsecondary degree by 2000, and two-thirds of this group had attained a bachelor's degree. The rate of bachelor's degree attainment declined and the rates of certificate and associate's degree attainment increased as the number of occupational credits students had earned increased; in other words, occupational coursework in high school was positively associated with the likelihood of earning an associate's degree or certificate, and negatively associated with the likelihood of earning a bachelor's degree within eight years of graduation.

The 2-year follow-up of the graduating class of 2004 was conducted too soon after the cohort graduated from high school to obtain complete data on their postsecondary attainment, particularly at the bachelor's degree level (Chen, forthcoming). As of 2006, the vast majority of students who had entered postsecondary education were still enrolled (81% of nonconcentrators and 77% of concentrators). A larger percentage of concentrators than nonconcentrators had attained a certificate or associate's degree and had left postsecondary education.

Labour market entry

Roughly one-quarter of the public high school class of 1992 entered the labour force within a year after graduating from high school and did not also enrol in postsecondary education (Levesque *et al.*, 2008) (Table 8). However, rates of entry into the labour force were associated with the number of occupational credits students earned; for example, those who earned 4.0 or more occupational credits were over three times more likely than their peers who did not take any occupational coursework to enter the labour force after high school rather than enrol in postsecondary education (39% vs. 11%).

In 2000, about 90% of the class of 1992 was employed (regardless of postsecondary enrolment status), and 80% worked full time. The employment rate and the likelihood of working full time increased as the number of occupational credits earned in high school increased.

For the class of 1992, the average total earnings among employed males in 1999 were USD 29 500, and the average total earnings for employed females were USD 21 000. The earnings of males and females are separated here due to their different rates of participation in the labour market and the significant body of research that supports the finding that males earn more than females, on average, even when controlling for pertinent factors such as hours worked per week, educational attainment, and occupation. The Levesque *et al.* (2008) analysis included a breakdown of earnings by full-time or part-time status, gender, and educational attainment, but did not account for occupation. The results of that study revealed that the earnings of male graduates in full-time jobs were not associated with their occupational coursetaking in high school, but those in part-time jobs who had taken occupational courses earned more in 1999 than their counterparts who had not taken such courses. Among females, the pattern was reversed: part-time earnings were not associated with occupational coursetaking, but full-time earnings among females who earned occupational credits in high school were lower than comparable earnings for females who had not taken these courses. Other studies on different populations have found mixed results when comparing the earnings of occupational coursetakers and those who did not take occupational courses, both in the short and long term (Chen, forthcoming; Silverberg *et al.*, 2004). In sum, occupational coursetaking does not have a clear relationship with earnings.

Postsecondary CTE

The 2006 reauthorisation of the Perkins Act made federal funds available, for the first time, to support baccalaureate programmes in addition to the sub baccalaureate programmes that have been the cornerstone of postsecondary CTE in previous years. This reflects a broad change in the way policymakers and researchers think about CTE at the postsecondary level. Grubb and Lazerson (2004) articulated that the primary goal of the education system is to prepare students for economic roles, calling it “vocationalism.” This concept is particularly true as researchers operationalise CTE at the postsecondary level; because the presumed intent of any student attending postsecondary education is to prepare for a career, one could argue that all postsecondary education is CTE. The ways in which researchers define CTE programme areas at the postsecondary level differ between studies.

This section summarises the types of institutions that deliver postsecondary CTE, the rates of participation among CTE students, and their outcomes. Where data were available, trend analyses were included as well.

Institutions

Types of institutions

There are multiple types of institutions that offer postsecondary instruction, and they vary according to level and control. Typically, a postsecondary institution is one of three levels: less-than-2-year, 2-year, and 4-year. Less-than-2-year institutions typically award certificates, credentials that signify completion of a programme that typically takes less than two full academic years to complete, typically in a CTE field. Two-year institutions typically offer both associate’s degrees, which generally take two academic years to complete, and certificates. Finally, 4-year institutions primarily offer bachelor’s degrees, which traditionally take between four and five academic years to complete. The control of the institution refers to whether the institution is operated by public officials and financed by public funds or by private officials supported by private funding sources. Distinctions are also often made between private for-profit institutions, often called propriety schools, of which a large number are less-than-2-year institutions, and private not-for-profit institutions, which account for the vast majority of private 4-year institutions.

Offerings

In 2006, 94% of the 6 502 undergraduate postsecondary institutions in the United States awarded a degree or certificate in a CTE field (Table 9). This percentage represents an increase since 1997, at which time 85% of the 6 594 institutions offered CTE degrees or certificates. Private not-for-profit 2-year and 4-year institutions were the least likely to offer CTE degrees or certificates (92% and 82% of these respective institutions did so). On the other hand, all public less-than-2-year institutions offered CTE degrees or certificates, and nearly all private for-profit 2-year and less-than-2-year institutions did so (99% each).

Most states offered CTE programmes in each institution level (4-year, 2-year, and less-than-2-year) in a roughly balanced mix (Levesque *et al.*, 2008). Table 10 shows the distribution of institutions that offer CTE by state. While the largest providers of postsecondary CTE in most states were for-profit institutions, typically these types of institutions made up less than half of the institutions offering CTE in each state.

Degree and certificate awards

Because each of these institutions serves different numbers of students, these breakdowns do not reflect the rates at which students receive degrees or certificates in CTE from postsecondary institutions. Despite making up a relatively small percentage of the total number of institutions that offered CTE (10%),

public 4-year institutions awarded 30% of the CTE postsecondary credentials awarded in 2006 (Table 11). These schools tend to have much larger enrolments than do other institution types, so they serve a disproportionate number of students. Public 2-year institutions also tend to have large enrolments and, therefore, awarded about 28% of the CTE credentials earned in 2006. For-profit institutions, which are often smaller but are more numerous nationwide than public 2- or 4-year institutions, awarded 23% of the postsecondary CTE credentials earned in 2006. Considerable variation is apparent by state: public 4-year institutions awarded anywhere from 6% (District of Columbia) to 65% (Montana) of all CTE credentials awarded in the state in 2006, while private for-profit awards made up between 5 and 47% (5% in Montana, 47% in Arizona) of the total awards offered in each state that year.

Some patterns are evident in the types of institutions that typically award different types of degrees. Specifically, in 2006, public and private not-for-profit 4-year institutions awarded primarily bachelor's degrees, while the degrees conferred by private for-profit 4-year institutions were split between baccalaureate and sub baccalaureate degrees, most of which were associate's degrees (Table 12). Most 2-year institutions award a mix of associate's degrees and certificates. The split was roughly 60/40 among private institutions: private not-for-profit institutions awarded more associate's degrees than certificates, while the opposite was true for private for-profit institutions. Among public 2-year institutions, the split was more even: 54% of degrees conferred by public 2-year institutions were certificates, and 46% were associate's degrees. Finally, among private for-profit less-than-2-year institutions, the vast majority of degrees conferred were certificates. Little change in these patterns has been observed over time.

Occupational programmes

In 2004–05, 90% of postsecondary institutions offered career education (Levesque *et al.*, 2008) (Table 13). Health care was the most popular programme (offered by 58% of all postsecondary institutions), followed by business and marketing (56%), computer sciences (48%), and personal and consumer services (46%). Programme offerings varied considerably by institution type. For example, few private institutions offered agriculture or natural resources programmes; most personal and consumer services programmes were offered at 2-year or less-than-2-year institutions; and trade and industry programmes were most prevalent at public 2-year institutions.

Participation in CTE

In 2004, about 17 million undergraduates were working toward postsecondary degrees or certificates (Levesque *et al.*, 2008). Of these students, about 11 million were seeking a degree in a CTE field; 81% of those in certificate programmes, 65% of those in associate's degree programmes, and 61% of those pursuing bachelor's degrees were in CTE fields (Table 14). Among a cohort of students who first enrolled in postsecondary education during the 1995–96 academic year and were seeking a degree in a CTE field, 25% were pursuing an associate's degree, 19% were pursuing a bachelor's degree, and 11% were pursuing a certificate (Table 15). The remaining 45% were seeking credentials in an academic field (10% at the bachelor's degree level, 9% at the associate's degree level, and less than 1% at the certificate level) or had not declared a major (25%).

Although the number of students pursuing each type of degree increased between 1990 and 2004, the share of postsecondary students seeking degrees or certificates in CTE fields declined from about 67% to 63% over that period. The proportion of bachelor's degree seekers with career majors did not change (59% in 1990 and 60% in 2004), but the percentage of associate's degree seekers with career majors declined from 69% to 64%, and the percentage of students pursuing certificates declined from 87% to 81%.

Among the five million undergraduates who were seeking a bachelor's degree in a CTE field in 2004, one-third were enrolled in business or marketing programmes, and 15% were in education (Table 16). 12%

were pursuing bachelor's degrees in health fields, 11% in engineering or architectural sciences, and 9% in computer sciences. Among associate's degree seekers, health care was the most popular field (30%), followed by business and marketing (25%) and education (10%). Finally, among those pursuing certificates in 2004, 40% were in health care, 15% were in personal and consumer services, and 12% were in business and marketing.

Student characteristics

Students enrolled in CTE fields in postsecondary education possessed different characteristics than those enrolled in academic fields (Tables 17–19). Specifically, students with CTE majors tended to be Black, to have enrolled later in life, and to have less educated parents (Levesque *et al.*, 2008). Among students seeking associate's or bachelor's degrees, students in CTE fields worked full time while enrolled at higher rates than their peers majoring in academic fields. Bachelor's degree seekers in CTE fields were more likely than their counterparts in academic majors to be female, whereas the opposite was true among associate's degree seekers.

Trends

Between 1990 and 2004, the percentage of students seeking associate's degrees and certificates in health care increased dramatically, from 19% to 30% among associate's degree seekers and from 17% to 40% among those seeking a certificate (Table 20) (Levesque *et al.*, 2008). Other studies did not find evidence of this uptick (Hecker 2001; Bailey *et al.* 2004), but Silverberg *et al.* (2004) noted that enrolment patterns in associate's degree programmes in particular tend to be responsive to shifts in labour market demands. The health care industry has grown considerably over the last two decades; Levesque's *et al.* (2008) findings may reflect the postsecondary education system adjusting to meet the demands of the labour market. Other changes of note include a decrease in the percentage of business majors at all three credential levels (from 34% to 28% for all undergraduates) and an increase from 6% in 1990 to 9% in 2000 and 2004 among students seeking bachelor's degrees in computer science.

Evidence from Levesque *et al.* (2008) indicates that, particularly in certain fields, students sought higher credentials in 2004 than in 1990. Among students with CTE majors, larger percentages sought bachelor's or associate's degrees in 2004 than in 1990, while the proportion who sought certificates declined in the same period. Compared with 1990, in 2004 larger percentages of students in communications, protective services, legal services, business and marketing, computer sciences, engineering and architectural sciences, and trade and industry were pursuing bachelor's degrees. Over the same time period, increases in the percentage of students pursuing associate's degrees rose among students in the fields of trade and industry, public, social, and human services, health care, education, legal services, personal and consumer services, and computer sciences.

Outcomes

Persistence and attainment

Two measures of success used frequently in postsecondary education research are persistence (remaining enrolled and working toward a degree) and degree completion. An examination of a cohort of students who began postsecondary education for the first time during the 1995–96 academic year revealed that as of 2001, among students who enrolled seeking a credential (in contrast to those who enrolled to take classes, gain job skills, etc.), 60% of those seeking an associate's degree or certificate and 82% of those seeking a bachelor's degree had attained any degree or were still enrolled (Hudson, Kienzl, and Diehl, 2007). Specifically, 62% of certificate seekers attained a degree and 3% were still enrolled in 2001 (Table 21). Among associate's degree seekers, 42% of those in CTE fields and 44% of those in academic

fields had earned a degree by 2001, while another 15% and 19%, respectively, were still enrolled. Finally, among bachelor's degree seekers, 69% of both CTE and academic majors earned degrees and 13–14% remained enrolled six years after beginning postsecondary education.

There was no variation in degree attainment rates between students in CTE fields and those in academic fields; however, compared with those in CTE fields, a larger percentage of students who initially sought an associate's degree in an academic field remained enrolled six years later. Students pursuing associate's degrees in academic fields were more likely than their peers in CTE fields to report that they intended to transfer to a 4-year institution, so this may reflect their success in having done so.

Looking at the distribution of degrees attained among those who earned a credential, 20% earned a certificate (nearly all in a CTE field); 18% earned an associate's degree (14% in a CTE field and 4% in an academic field); and 59% earned a bachelor's degree (one-third in a CTE field and 25% in an academic field) (Hudson, Kienzl, and Diehl, 2007) (Table 22). Two-thirds of the degrees earned by this cohort by 2001 were in CTE fields.

As a measure of successful postsecondary completion, the authors also analysed the extent to which the students in the 1995–96 cohort who earned a credential met their initial degree goals. By definition, all students who originally sought a certificate and went on to earn a degree met or exceeded their goal because the certificate is the lowest credential available in postsecondary education. Of those whose initial goal was an associate's degree, two-thirds of those who attained a degree in a CTE field earned an associate's degree. Those seeking associate's degrees in academic fields fared better, with 87% completing an associate's degree. The other 34% of CTE and 13% of academic associate's degree seekers completed certificates. Among bachelor's degree seekers, the rates did not vary by field of study: between 93% and 95% of the students in CTE and academic fields who reported a bachelor's degree goal upon enrolment and had completed any degree by 2001 were successful in attaining a bachelor's degree.

Labour market entry

Research has demonstrated positive relationships between earning postsecondary credentials and labour market outcomes, including subjective measures such as self-reported data on the effects of such credentials on autonomy and job opportunities (Hoachlander, Sikora, and Horn, 2003) and objective measures like salary and employment rates (Day and Newburger 2002; Grubb 2002; Bailey, Kienzl, and Marcotte, 2004). As is the case for all students, CTE students generally benefit most from earning bachelor's degrees and least from earning certificates, particularly in terms of earnings.

In 2001, the employment rate among both certificate and associate's degree recipients who first entered postsecondary education in 1995–96 was 87% (Hudson, Kienzl, and Diehl, 2007). Another 7% were unemployed (not employed but looking for work), and the remaining 6% were out of the labour force. Similar rates were observed for completers in CTE fields and those in academic fields. Students who completed certificates in a CTE field enjoyed higher employment rates than their peers who did not complete the CTE certificate they sought upon enrolment; however, this finding did not hold for completers of associate's degrees, where no differences were apparent. A multivariate regression analysis on these relationships did not bear out the difference in employment rates at the certificate level.

Students in this cohort who completed a certificate or an associate's degree in a CTE field were more likely than their counterparts who did not complete the CTE degree they were pursuing to be employed in a job related to their field of study. This is not a surprising finding. Students who do well in their coursework and enjoy the classes they take while enrolled are more likely to feel as though they have found a good fit in a particular line of work and, therefore, are more likely to pursue that occupation upon completing the degree. On the other hand, students who find that the coursework does not match their

interests or who are struggling in their classes are less likely to attain a degree and, consequently, may lack the skills, minimum requirements for licensure, or the desire to seek a job in that field.

In contrast to some other findings on salary, neither the bivariate nor the multivariate regression analyses performed by Hudson, Kienzl, and Diehl (2007) found evidence that completing an associate's degree or certificate in a CTE field had an effect on salary relative to those who were unsuccessful in completing degrees in those fields. An interaction effect related to the number of years of postsecondary education was found, but only for those working in jobs related to their undergraduate education.

Adult CTE

A study of adults revealed that in 2004–05, 27% of all adults and 37% of adults in the labour force took at least one work-related course (Levesque *et al.*, 2008). Work-related courses, in this study, included any courses that the respondent reported taking for work-related reasons that were not part of a programme that leads to a postsecondary credential. These could include English as a Second Language (ESL), basic skills, and high school equivalency coursework; apprenticeship programmes; and any postsecondary coursework that was not taken as part of a credential programme.

Participation in CTE

Participants in work-related courses took, on average, 2.1 courses over the course of a 12-month period in 2004–05. Half of the participants took just one course, 23% took two courses, and 18% took three or four courses. The remaining 8% reported taking five or more courses. On average, participants reported spending 42 hours on work-related courses. The distribution was roughly evenly split between those who spent 1–4, 5–8, 9–20, 21–40, and 41 or more hours on coursework, with roughly 20% of the distribution falling in each category. Participation rates and course loads have changed little over time, though participation did vary by the highest degree attained. Participants with higher degrees tended to participate at higher rates and to take more hours of coursework when they did participate than those with lower degrees.

Occupational programmes

The most popular fields for work-related courses in 2004–05 were business and health: about one-third of participants took at least one course in business, and one-third took at least one health course. Some variation in work-related coursetaking was apparent by the highest degree the participant had earned, which is likely related to occupation: vocational trades was a common field among high school graduates, and education was popular among participants who had a graduate or professional degree.

Delivery of CTE

Providers of work-related courses are varied and include traditional education providers as well as businesses, organisations and professional associations, and government agencies. The most common provider of work-related courses is the participant's employer: 45% of participants reported that their employer provided the work-related courses they took. Other businesses were the next most common provider: 25% of participants took work-related courses from a business other than their employer. Postsecondary institutions provided work-related courses to 16% of participants. Participants were primarily motivated by employer requirements (63%), obtaining or keeping a license (42%), or earning continuing education credit (33%). 11% reported participating in order to earn college credit.

Perceptions of CTE

Among the adults surveyed in 2004–05, perceptions of work-related coursetaking were very positive. Most (65%) reported that at least one of the courses they took was very useful, and nearly all (94%) reported that the course improved their skills or knowledge. The majority also reported learning new skills, becoming more employable, and improving their ability to advance in their career as benefits of their work-related coursetaking. Educational attainment was again associated with perceptions: more educated participants reported being required to take work-related courses and that they had their supervisor's support in taking more coursework.

Summary

Career and technical education spans a wide range of institutions and is delivered in a myriad of ways to a large percentage of the population. Most secondary and postsecondary institutions provide CTE: secondary institutions provide CTE in comprehensive high schools, area CTE schools, and full-time CTE high schools, and postsecondary institutions provide CTE in public, private not-for-profit, and private for-profit 2-year, 4-year, and less-than-2-year institutions. Employers and businesses provide the bulk of work-related courses.

Participation in CTE is widespread across secondary, postsecondary, and adult education: 90% of public high school graduates took occupational courses in 2005, 60–81% of postsecondary students majored in CTE fields at the certificate, associate's, and bachelor's degree levels, and 37% of adults in the labour force in 2004–05 reported having taken a work-related course in the previous year. At the secondary level, CTE participation rates remained constant between 1990 and 2005, whereas there was a decline in the percentage of associate's degrees and certificates awarded in CTE fields between 1990 and 2004 and in the percentage of participants taking work-related courses between 2001 and 2005.

Reflecting the current labour market, business and health care were the two most popular programmes. At the secondary level, 40% of students who took any CTE coursework completed at least one class in business, and 9% completed a health sciences class. Nearly 30% of all credential-seeking undergraduates who selected a major in a CTE field chose business and 22% chose health care, and about one-third of work-related course participants took a course in business and another third took a course in health. The popularity of health and computer science programmes has grown substantially over the last 20 years, while that of business has shrunk somewhat.

In general, students who took occupational coursework in high school fared worse, from an academic standpoint, than their peers who did not take occupational coursework. Occupational concentrators in high school took fewer academic courses, were less well-prepared for college, and aspired to lower postsecondary degrees than nonconcentrators. Compared with nonconcentrators, postsecondary enrolment rates were also lower among concentrators. Those concentrators who did enrol waited longer, on average, to do so after high school, enrolled in 2-year or less-than-2-year institutions at higher rates, and, not surprisingly, attained degrees at lower rates than their nonconcentrator peers.

CTE at all levels serves a wide variety of students and often serves students who have had difficulty with the academic curriculum. The CTE system has also traditionally provided paths to careers after high school or paths to certificate or associate's degree completion, which equips students with skills for entry- or low-level, low-skill positions in the labour market. As CTE evolves and becomes more closely integrated with academic coursework and better poised to prepare students for high-skill, high-wage jobs, it will attract students with a wider variety of goals. As a result, some of the gaps between CTE and academic fields may begin to narrow.

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ANNEX

Table 1. Number and percentage distribution of public and private schools with a 10th grade (excluding area career/technical education [CTE] schools), by school type and sector: 2002

School sector	All schools with 10th grade	School type		
		Full-time CTE school	Comprehensive school served by an area CTE school	Comprehensive school not served by an area CTE school
Public				
Number	18 000	900	8 200	8 900
Percentage	100%	5.2%	45.6%	49.2%
Private				
Number	6 300	‡	‡	6 000
Percentage	100%	0.2% !	4.1% !	95.7%

! Interpret data with caution. Due to relatively large standard errors, estimates are unstable.

‡ Reporting standards not met. Too few cases for a reliable estimate.

NOTE: CTE is career/technical education. Area CTE schools were not included in the data collection and thus are not included in this table. Area CTE schools are described in tables H8 and H9. Detail may not sum to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "School Administrator Questionnaire Base Year." Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h01.asp>, table H1.

Table 2. Percentage of public and private schools with a 10th grade that offered occupational programmes, by programme type offered and school sector: 2002

	All public schools	All private schools
Agriculture	62.4	28.7
Business	96.5	67.1
Marketing	57.9	40.6
Communications technology	53.6	42.4
Computer technology	94.4	80
Other technology	58.3	12.5
Construction	73.5	55.8
Mechanics and repair	81.9	51.2
Trade and industry/transportation	28.8	13.4
Precision production	78.9	48
Health care	64.9	52.5
Child care and education	68.3	58.5
Protective services	25.8	1.9
Food service and hospitality	57.4	51.3
Personal and other services	48	54.8
Other occupational programmes	48.2	30.7

Source: U.S. Department of Education. National Center for Education Statistics. Education Longitudinal Study of 2002 (ELS:2002). "School Administrator Questionnaire Base Year." Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h05.asp>, table H5.

Table 3. Percentage distribution of public schools with a 10th grade that offered selected career-related activities, by extent of activity and school type: 2002

School type	Career plan			Career major or pathway		
	No students develop	Some students develop	All students develop	No students select	Some students select	All students select
All public schools with 10th grade	9.8	33.2	57.0	14.5	44.7	40.9
Full-time CTE school	8.5 !	26.5 !	65.0	4.5 !	43.7	51.8
Comprehensive school served by an area CTE school	11.7	26.0	62.3	11.6	48.0	40.5
Comprehensive school not served by an area CTE school	8.2 !	40.8	51.0	18.3	41.6	40.1

! Interpret data with caution. Due to relatively large standard errors, estimates are unstable.

NOTE: CTE is career/technical education. Area CTE schools were not included in the data collection and thus are not included in this table. Area CTE schools are described in tables H8 and H9. Detail may not sum to 100% because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "School Administrator Questionnaire Base Year." Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h13.asp>, table H13.

Table 4. Percentage and number of public schools with a 12th grade that offered career academies, by selected school characteristics: 2004

School characteristic	Percentage	Number
All public schools with 12th grade	21.5	4 800
School type		
Regular	23.3	3 700
Special emphasis	31.6	200
Special education	8.1 !	‡
Vocational/technical	60.2	‡
Alternative	12.0	600
Charter school status		
Charter school	15.7	‡
Not a charter school	21.8	4 700
School size		
1–599 students	13.7	1 800
600–1 199 students	25.5	1 200
1 200–1 999 students	39.5	1 200
2 000 or more students	45.4	600
Locale		
Urban	29.2	1 300
Suburban and town	23.8	2 200
Rural	15.2	1 300

— Not available due to some schools having missing data for the percent of students eligible for NSLP.

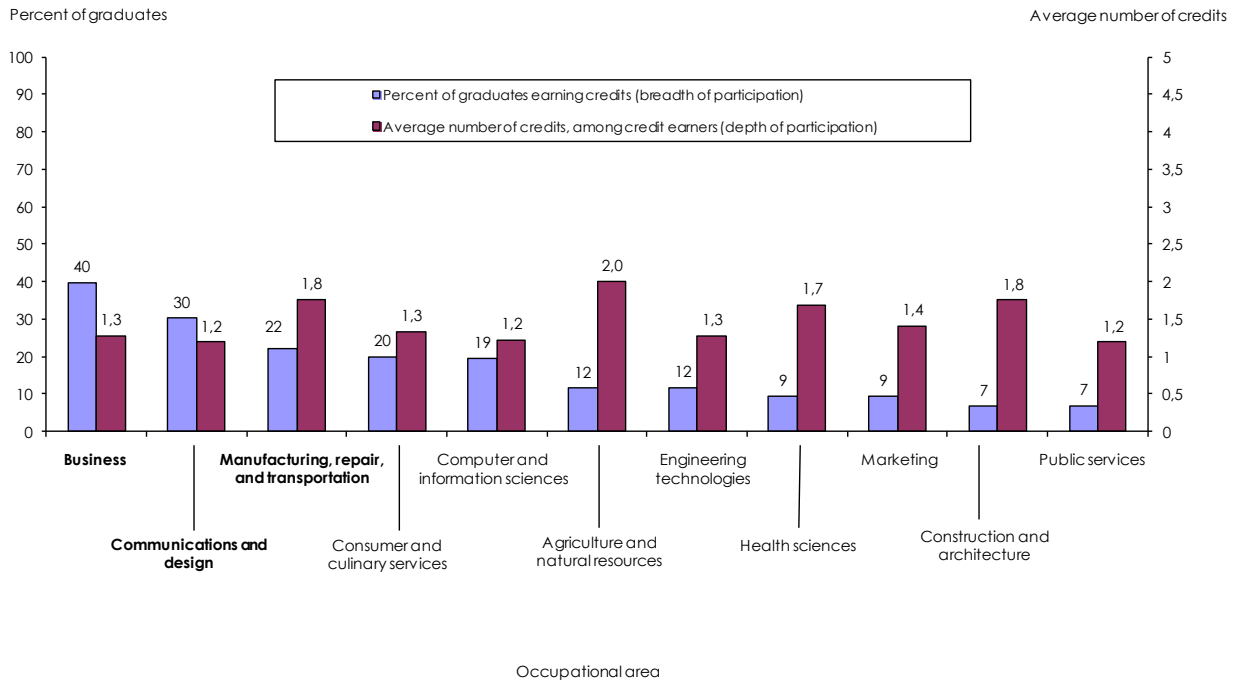
! Interpret data with caution. Due to relatively large standard errors, estimates are unstable.

‡ Reporting standards not met. Too few cases for a reliable estimate.

NOTE: NSLP is the National School Lunch Program. Area CTE schools were not fully included in the data collection and thus are not included in this table. Area CTE schools are described in tables H8 and H9.

Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public School Questionnaire," 2003–04. Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h14.asp>, table H14.

Figure 1. Percentage of public high school graduates who earned credits in each occupational area and, among those graduates, the average number of credits earned in the area, Class of 2005



NOTE: Occupational areas listed in bold are those in which public high school graduates earned the highest average number of credits.

Source: U.S. Department of Education, National Center for Education Statistics, the 2005 High School Transcript Study (HSTS).

Table 5. Percentage of public high school graduates who concentrated in each occupational area, by number of occupational credits earned: 2005

Occupational concentration	2-credit occupational concentrators ¹			3-credit occupational concentrators ²		
	All graduates	Graduates who earned any occupational credits	Graduates who earned 2.0 or more occupational credits	All graduates	Graduates who earned any occupational credits	Graduates who earned 3.0 or more occupational credits
Any occupational concentration	38.8	44.7	68.6	21.3	24.5	54.1
Agriculture and natural resources	4.7	5.5	8.4	2.9	3.4	7.5
Business	8.5	9.7	15.0	3.1	3.5	7.8
Communications and design	5.4	6.2	9.5	2.0	2.4	5.2
Computer and information sciences	3.7	4.3	6.5	1.4	1.6	3.6
Construction and architecture	2.1	2.5	3.8	1.2	1.4	3.1
Consumer and culinary services	4.4	5.0	7.7	2.2	2.5	5.6
Engineering technologies	2.4	2.8	4.3	1.0	1.2	2.6
Health sciences	3.2	3.7	5.7	2.1	2.5	5.4
Manufacturing, repair, and transportation	7.5	8.6	13.3	4.5	5.2	11.5
Marketing	2.6	3.1	4.7	1.4	1.6	3.6
Public services	1.2	1.4	2.1	0.6	0.7	1.5

¹ 2-credit occupational concentrators are defined as graduates who earned 2.0 or more credits in any one of the 11 occupational

² 3-credit occupational concentrators are defined as graduates who earned 3.0 or more credits in any one of the 11 occupational

NOTE: This table shows, for example, that among all public high school graduates from the class of 2005, 4.7% completed a 2-credit occupational concentration in agriculture and natural resources. Also, 5.5% of graduates who earned any occupational credits completed a 2-credit occupational concentration in agriculture and natural resources. The total weighted count of public high school graduates in 2005 was 2.4 million. Detail may not sum to totals because of rounding.

Source: SOURCE: U .S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, High School Transcript Study (HSTS), 2005. Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h30.asp>, Table H30.

Table 6. Percentage of 1992 public high school graduates who enrolled in postsecondary education within 12 months of graduating from high school, percentage of graduates who enrolled by 2000, and average number of months until graduates enrolled, by occupational credits earned in high school: 2000

Occupational credits earned in high school	Percent enrolled within 12 months	Percent enrolled by 2000	Average number of months until enrollment
All public high school graduates	70.2	83.2	7.3
None	84.0	92.0	5.1
0.01–1.99 credits	78.5	89.5	5.9
2.00–3.99 credits	72.4	85.5	7.6
4.00 or more credits	53.0	70.3	10.0

Source: U.S. Department of Education, National Center for Education Statistics, The National Education Longitudinal Study of 1988 (NELS:88/2000), "Fourth Follow-up, 2000." Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h41.asp>, Table H41.

Table 7. Percentage distribution of 1992 public high school graduates according to highest post-secondary credential attained by 2000, by occupational credits earned in high school: 2000

Occupational credits earned in high school	Highest postsecondary credential attained by 2000						
	No post-secondary credential	Any postsecondary credential					
		Total	Subbaccalaureate credential				
			Total	Certificate	Associate's degree	Bachelor's or higher degree	
All public high school graduates	39.3	60.7	15.0	5.7	9.3	45.7	
None	27.1	72.9	6.7	2.0	!	4.7	66.1
0.01–1.99 credits	34.9	65.1	11.0	5.2	5.8	54.1	
2.00–3.99 credits	38.8	61.2	17.0	6.2	10.8	44.2	
4.00 or more credits	52.6	47.4	22.0	7.4	14.6	25.4	

! Interpret data with caution. Due to relatively large standard errors, estimates are unstable.

NOTE: Detail may not sum to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, The National Education Longitudinal Study of 1988 (NELS:88/2000), "Fourth Follow-up, 2000." Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h43.asp>, Table H43.

Table 8. Percentage of 1992 public high school graduates who worked without also enrolling in postsecondary education during the first 12 months after graduating from high school and the percentage of these "initial workers" who enrolled in postsecondary education by 2000, by occupational credits earned in high school: 2000

Occupational credits earned in high school	Worked without also enrolling in postsecondary education within 12 months (initial workers)	Initial workers who enrolled in postsecondary education by 2000
All public high school graduates	23.4	37.2
None	11.3	54.2
0.01–1.99 credits	16.1	39.3
2.00–3.99 credits	21.2	42.3
4.00 or more credits	39.1	31.2

Source: U.S. Department of Education, National Center for Education Statistics, The National Education Longitudinal Study of 1988 (NELS:88/2000), "Fourth Follow-up, 2000." Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/h44.asp>, Table H44.

Table 9. Number of Title IV postsecondary undergraduate institutions, overall, and those awarding career education credentials, and percentage of Title IV postsecondary undergraduate institutions awarding career education credentials, by control and level of institution: United States, 1997 to 2006

Control and level of institution	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total. all postsecondary undergraduate institutions	6 594	6 330	6343	6438	6422	6344	6379	6350	6432	6502
Public 4-year	622	603	610	619	623	628	629	634	635	638
Public 2-year	1236	1209	1194	1197	1165	1154	1162	1143	1154	1148
Public less-than-2-year	305	261	310	261	305	273	250	244	218	217
Private not-for-profit 4-year	1562	1500	1512	1548	1540	1534	1539	1518	1528	1523
Private not-for-profit 2-year	346	312	272	288	269	255	233	225	219	211
Private not-for-profit less-than-2-year	99	106	78	84	105	111	116	107	96	89
Private for-profit 4-year	173	196	268	281	321	300	349	368	406	450
Private for-profit 2-year	811	810	804	811	779	766	783	793	821	844
Private for-profit less-than-2-year	1440	1333	1295	1349	1315	1323	1318	1318	1355	1382
Total. all postsecondary undergraduate institutions awarding career education credentials	5573	5608	5363	5759	5569	5753	5865	5941	6048	6120
Public 4-year	578	578	566	588	589	596	601	605	613	615
Public 2-year	1147	1158	1133	1157	1127	1122	1129	1125	1139	1128
Public less-than-2-year	211	243	233	247	271	261	249	244	218	217
Private not-for-profit 4-year	1164	1187	1176	1234	1227	1233	1253	1256	1258	1254
Private not-for-profit 2-year	292	264	228	253	222	223	209	205	200	194
Private not-for-profit less-than-2-year	81	85	57	73	85	101	110	103	94	87
Private for-profit 4-year	125	149	170	188	211	240	287	328	372	418
Private for-profit 2-year	723	752	705	770	709	729	753	773	811	835
Private for-profit less-than-2-year	1252	1192	1095	1249	1128	1248	1274	1302	1343	1372

Control and level of institution	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Percentage of postsecondary undergraduate institutions awarding career education credentials	84.5	88.6	84.5	89.5	86.7	90.7	91.9	93.6	94.0	94.1
Public 4-year	92.9	95.9	92.8	95.0	94.5	94.9	95.5	95.4	96.5	96.4
Public 2-year	92.8	95.8	94.9	96.7	96.7	97.2	97.2	98.4	98.7	98.3
Public less-than-2-year	69.2	93.1	75.2	94.6	88.9	95.6	99.6	100.0	100.0	100.0
Private not-for-profit 4-year	74.5	79.1	77.8	79.7	79.7	80.4	81.4	82.7	82.3	82.3
Private not-for-profit 2-year	84.4	84.6	83.8	87.8	82.5	87.5	89.7	91.1	91.3	91.9
Private not-for-profit less-than-2-year	81.8	80.2	73.1	86.9	81.0	91.0	94.8	96.3	97.9	97.8
Private for-profit 4-year	72.3	76.0	63.4	66.9	65.7	80.0	82.2	89.1	91.6	92.9
Private for-profit 2-year	89.1	92.8	87.7	94.9	91.0	95.2	96.2	97.5	98.8	98.9
Private for-profit less-than-2-year	86.9	89.4	84.6	92.6	85.8	94.3	96.7	98.8	99.1	99.3

NOTE: This table shows, for example, that in 1997, there were 622 public 4-year undergraduate institutions; that 578 public 4-year undergraduate institutions awarded career education credentials; and that 92.9% of all public 4-year undergraduate institutions awarded career education credentials. This table excludes institutions that award only graduate or first-professional credentials. There are no standard errors for this table because it is based on population counts.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions and Institutional Characteristics (IC) data files, various years (e.g., report year 2006 uses IC 2006–07 and Completions 2005–06). Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/P71.asp>, table P71.

Table 10. Percentage distribution of Title IV postsecondary institutions that offered career education programmes, by control and level of institution and state: United States, 2006

State	Total, all institutions	Public			Private not-for-profit			For-profit
		4-year	2-year	Less than 2-year	4-year	2-year	Less than 2-year	
All states	100.0	10.0	18.4	3.5	20.5	3.2	1.4	42.9
Alabama	100.0	19.2	32.9	0.0	23.3	1.4	1.4	21.9
Alaska	100.0	30.0	20.0	10.0	20.0	0.0	0.0	20.0
Arizona	100.0	5.7	20.8	1.9	10.4	0.0	0.0	61.3
Arkansas	100.0	13.8	27.5	3.8	13.8	2.5	0.0	38.8
California	100.0	5.7	19.7	1.2	13.6	2.1	4.2	53.6
Colorado	100.0	12.6	14.6	3.9	10.7	1.0	0.0	57.3
Connecticut	100.0	9.2	15.8	0.0	17.1	6.6	1.3	50.0
Delaware	100.0	12.5	18.8	0.0	25.0	12.5	0.0	31.3
District of Columbia	100.0	5.9	0.0	0.0	52.9	0.0	5.9	35.3
Florida	100.0	5.4	17.6	2.4	17.2	0.3	1.4	55.7
Georgia	100.0	13.1	31.5	0.0	16.1	1.2	0.0	38.1
Hawaii	100.0	16.0	24.0	0.0	16.0	8.0	0.0	36.0
Idaho	100.0	16.0	12.0	0.0	16.0	0.0	0.0	56.0
Illinois	100.0	4.9	19.4	0.8	25.5	2.8	2.8	43.7
Indiana	100.0	12.0	12.0	1.6	27.2	2.4	0.0	44.8
Iowa	100.0	3.4	18.2	0.0	36.4	3.4	0.0	38.6
Kansas	100.0	10.6	32.9	2.4	22.4	1.2	2.4	28.2
Kentucky	100.0	8.0	16.0	0.0	23.0	0.0	2.0	51.0
Louisiana	100.0	11.7	31.4	2.9	5.8	2.2	0.0	46.0
Maine	100.0	21.1	18.4	0.0	26.3	7.9	2.6	23.7
Maryland	100.0	16.9	19.3	0.0	22.9	0.0	0.0	41.0
Massachusetts	100.0	8.6	9.9	3.1	37.7	3.7	0.0	37.0

State	Total. all institutions	Public			Private not-for-profit			For-profit
		4-year	2-year	Less than 2-year	4-year	2-year	Less than 2-year	
Michigan	100.0	9.1	18.8	0.6	26.1	1.8	0.6	43.0
Minnesota	100.0	9.0	25.4	0.0	22.1	1.6	3.3	38.5
Mississippi	100.0	15.8	26.3	0.0	17.5	0.0	0.0	40.4
Missouri	100.0	7.5	13.2	12.1	21.8	2.9	0.0	42.5
Montana	100.0	19.4	38.7	0.0	12.9	6.5	0.0	22.6
Nebraska	100.0	13.7	15.7	0.0	33.3	7.8	0.0	29.4
Nevada	100.0	14.3	5.7	0.0	2.9	2.9	2.9	71.4
New Hampshire	100.0	14.7	11.8	0.0	26.5	2.9	5.9	38.2
New Jersey	100.0	9.4	13.4	2.0	14.1	5.4	0.7	55.0
New Mexico	100.0	18.6	41.9	0.0	9.3	0.0	0.0	30.2
New York	100.0	10.6	9.1	7.8	33.2	8.1	2.5	28.6
North Carolina	100.0	9.6	38.5	0.0	28.2	1.3	0.6	21.8
North Dakota	100.0	25.0	25.0	0.0	17.9	3.6	0.0	28.6
Ohio	100.0	8.0	11.3	15.7	20.0	3.7	1.0	40.3
Oklahoma	100.0	11.1	24.4	18.5	9.6	0.0	0.0	36.3
Oregon	100.0	11.1	19.8	0.0	24.7	1.2	0.0	43.2
Pennsylvania	100.0	11.3	4.4	7.7	22.5	10.2	1.4	42.6
Rhode Island	100.0	8.7	4.3	0.0	39.1	8.7	0.0	39.1
South Carolina	100.0	16.3	21.3	0.0	27.5	2.5	0.0	32.5
South Dakota	100.0	24.1	17.2	0.0	20.7	13.8	0.0	24.1
Tennessee	100.0	5.9	25.5	0.0	24.2	2.0	0.7	41.8
Texas	100.0	12.0	17.4	0.0	12.0	1.1	0.8	56.7
Utah	100.0	10.2	11.9	3.4	5.1	1.7	0.0	67.8
Vermont	100.0	19.2	3.8	3.8	53.8	3.8	0.0	15.4
Virginia	100.0	10.4	16.7	4.9	20.1	2.8	2.1	43.1
Washington	100.0	7.0	29.8	0.9	14.9	2.6	0.9	43.9

State	Total. all institutions	Public			Private not-for-profit			For-profit
		4-year	2-year	Less than 2-year	4-year	2-year	Less than 2-year	
West Virginia	100.0	15.5	19.7	14.1	12.7	1.4	7.0	29.6
Wisconsin	100.0	14.9	19.5	0.0	27.6	5.7	3.4	28.7
Wyoming	100.0	8.3	58.3	8.3	0.0	0.0	0.0	25.0

NOTE: This table shows, for example, that 19.2% of the Title IV institutions that offered career education in Alabama in 2006 were public 4-year institutions. Detail may not sum to totals because of rounding. An institution was counted as offering a career education programme if it awarded an undergraduate credential in a career field of study. There are no standard errors for this table because it is based on population counts.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2005–06 Completions and 2006-07 Institutional Characteristics (IC) data files. Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/P23.asp>, table P23.

Table 11. Percentage distribution of career education credentials awarded by Title IV postsecondary institutions, by control and level of institution and state: United States, 2006

State	Total. all institutions	Public			Private not-for-profit			For-profit
		4-year	2-year	Less than 2-year	4-year	2-year	Less than 2-year	
All states	100.0	30.1	28.3	1.5	15.4	0.9	0.5	23.2
Alabama	100.0	50.2	31.8	0.0	8.6	0.2	0.1	9.0
Alaska	100.0	64.3	0.8	10.3	3.4	0.0	0.0	21.3
Arizona	100.0	18.7	31.7	0.5	2.5	0.0	0.0	46.6
Arkansas	100.0	42.9	35.0	3.5	9.3	2.1	0.0	7.3
California	100.0	22.6	29.9	1.5	7.5	2.7	2.0	33.8
Colorado	100.0	27.7	25.1	12.8	6.2	0.4	0.0	27.9
Connecticut	100.0	24.4	16.5	0.0	21.5	2.2	1.5	34.0
Delaware	100.0	40.6	31.0	0.0	16.6	1.1	0.0	10.6
District of Columbia	100.0	5.9	0.0	0.0	48.8	0.0	1.0	44.4
Florida	100.0	27.6	28.2	1.8	12.6	0.1	0.5	29.2
Georgia	100.0	26.6	49.5	0.0	7.5	0.2	0.0	16.2
Hawaii	100.0	33.3	19.5	0.0	25.7	6.0	0.0	15.5
Idaho	100.0	50.3	13.5	0.0	21.9	0.0	0.0	14.3
Illinois	100.0	19.5	32.9	0.2	18.0	0.2	0.5	28.7
Indiana	100.0	48.2	15.1	0.2	20.8	0.4	0.0	15.4
Iowa	100.0	24.3	31.9	0.0	22.2	0.3	0.0	21.3
Kansas	100.0	33.9	42.9	2.8	10.3	0.2	2.2	7.7
Kentucky	100.0	30.0	47.9	0.0	7.1	0.0	0.4	14.6
Louisiana	100.0	51.4	21.2	0.7	6.7	0.2	0.0	19.7
Maine	100.0	44.4	26.3	0.0	14.2	1.4	0.9	12.8
Maryland	100.0	42.3	26.1	0.0	11.3	0.0	0.0	20.3
Massachusetts	100.0	19.1	19.8	0.8	41.1	1.4	0.0	17.8

State	Total. all institutions	Public			Private not-for-profit			For-profit
		4-year	2-year	Less than 2-year	4-year	2-year	Less than 2-year	
Michigan	100.0	39.0	24.4	0.1	20.1	0.2	0.1	16.1
Minnesota	100.0	26.2	44.3	0.0	13.3	1.1	0.6	14.5
Mississippi	100.0	41.7	42.9	0.0	7.1	0.0	0.0	8.3
Missouri	100.0	30.7	13.1	2.2	30.9	0.3	0.0	22.8
Montana	100.0	64.8	18.6	0.0	10.6	1.5	0.0	4.5
Nebraska	100.0	33.7	31.3	0.0	23.6	0.2	0.0	11.2
Nevada	100.0	51.5	4.7	0.0	0.2	0.1	0.1	43.3
New Hampshire	100.0	27.1	19.5	0.0	26.2	0.3	0.9	26.0
New Jersey	100.0	30.2	20.7	1.1	11.3	0.8	0.2	35.8
New Mexico	100.0	35.4	42.1	0.0	3.3	0.0	0.0	19.3
New York	100.0	25.8	16.8	2.0	30.4	2.0	1.1	21.9
North Carolina	100.0	30.9	47.5	0.0	15.6	0.1	0.1	5.8
North Dakota	100.0	57.5	22.8	0.0	11.1	1.4	0.0	7.1
Ohio	100.0	34.4	22.1	6.9	18.9	0.9	0.4	16.5
Oklahoma	100.0	37.4	26.7	11.6	7.8	0.0	0.0	16.5
Oregon	100.0	34.1	24.4	0.0	11.9	0.6	0.0	29.0
Pennsylvania	100.0	29.0	10.9	2.0	24.8	3.6	0.5	29.0
Rhode Island	100.0	17.3	7.3	0.0	56.6	0.5	0.0	18.3
South Carolina	100.0	33.4	45.2	0.0	14.2	0.1	0.0	7.1
South Dakota	100.0	42.1	28.4	0.0	13.1	1.3	0.0	15.2
Tennessee	100.0	28.1	29.8	0.0	17.3	0.4	0.1	24.2
Texas	100.0	31.8	27.7	0.0	9.2	0.2	0.5	30.6
Utah	100.0	39.8	19.6	3.0	19.3	1.5	0.0	16.9
Vermont	100.0	51.0	6.1	0.5	33.5	0.1	0.0	8.8
Virginia	100.0	34.9	25.2	1.1	12.8	0.8	0.5	24.7
Washington	100.0	26.7	45.0	0.6	9.2	0.5	#	17.9
West Virginia	100.0	47.0	18.7	6.3	14.0	0.2	0.9	12.9

State	Total. all institutions	Public			Private not-for-profit			For-profit
		4-year	2-year	Less than 2-year	4-year	2-year	Less than 2-year	
Wisconsin	100.0	29.4	51.4	0.0	13.5	0.6	0.4	4.8
Wyoming	100.0	22.9	35.4	0.2	0.0	0.0	0.0	41.5

Rounds to zero.

NOTE: This table shows, for example, that 50.2% of the career education credentials awarded by Title IV institutions in Alabama in 2006 were awarded by public 4-year institutions. Detail may not sum to totals because of rounding. Career education credentials include only undergraduate credentials. There are no standard errors for this table because it is based on population counts.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2005-06 Completions and 2006-07 Institutional Characteristics (IC) data files. Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/P23.asp>, table P23.

Table 12. Percentage distribution of undergraduate career education credentials awarded by Title IV postsecondary institutions, by control and level of institution and credential level: United States, 1997 to 2006

Control and level of institution and credential level	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total. all undergraduate career education credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	56.2	54.8	54.6	53.8	52.9	53.5	55.2	55.7	56.2	55.7
Certificates	32.1	31.2	30.8	31.3	29.9	31.4	32.9	33.4	33.6	33.0
Associate's degrees	24.1	23.6	23.8	22.5	23.0	22.1	22.3	22.3	22.6	22.7
Bachelor's degrees	43.8	45.2	45.4	46.2	47.1	46.5	44.8	44.3	43.8	44.3
Control and level of institution										
Public 4-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	7.2	7.0	6.5	6.3	6.4	6.2	6.8	7.4	7.4	7.7
Certificates	1.9	1.6	1.5	1.5	1.6	1.5	1.7	1.7	1.7	2.0
Associate's degrees	5.4	5.4	5.0	4.9	4.7	4.7	5.1	5.6	5.7	5.7
Bachelor's degrees	92.8	93.0	93.5	93.7	93.6	93.8	93.2	92.6	92.6	92.3
Public 2-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Certificates	46.8	45.9	45.6	46.8	49.2	50.5	53.9	54.3	54.2	53.5
Associate's degrees	53.2	54.1	54.4	53.2	50.8	49.5	46.1	45.7	45.8	46.5
Bachelor's degrees	0.0	0.0	#	0.0	0.0	0.0	0.0	0.0	#	0.0
Public less-than-2-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Certificates	100.0	99.7	99.7	99.7	99.8	99.9	99.7	99.9	99.9	99.9
Associate's degrees	0.0	0.3	0.3	0.3	0.2	0.1	0.3	0.1	0.1	0.1
Bachelor's degrees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Control and level of institution and credential level	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Private not-for-profit 4-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	12.6	12.3	12.0	11.9	12.5	12.2	11.7	11.9	11.8	12.3
Certificates	2.3	2.7	2.2	2.6	2.8	2.8	2.7	2.9	2.7	2.8
Associate's degrees	10.3	9.6	9.9	9.3	9.7	9.4	8.9	9.0	9.1	9.5
Bachelor's degrees	87.4	87.7	88.0	88.1	87.5	87.8	88.3	88.1	88.2	87.7
Private not-for-profit 2-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Certificates	23.0	20.7	27.6	28.3	29.1	29.3	35.2	35.2	35.8	37.4
Associate's degrees	77.0	79.3	72.4	71.7	70.9	70.7	64.8	64.8	64.2	62.6
Bachelor's degrees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Private not-for-profit less-than-2-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Certificates	100.0	100.0	94.5	97.2	100.0	97.2	100.0	100.0	100.0	100.0
Associate's degrees	0.0	0.0	5.5	2.8	0.0	2.8	#	0.0	0.0	0.0
Bachelor's degrees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Private for-profit 4-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	57.0	58.0	60.9	57.3	55.4	56.0	56.6	54.6	54.5	50.7
Certificates	9.0	8.0	10.0	9.2	10.3	9.0	8.2	10.0	11.1	11.2
Associate's degrees	48.0	49.9	50.9	48.1	45.1	46.9	48.3	44.6	43.4	39.6
Bachelor's degrees	43.0	42.0	39.1	42.7	44.6	44.0	43.4	45.4	45.5	49.3
Private for-profit 2-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Certificates	53.1	53.3	53.1	52.2	45.2	48.7	49.9	56.6	57.0	57.1

Control and level of institution and credential level	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Associate's degrees	46.9	46.7	46.9	47.8	54.8	51.3	50.1	43.4	43.0	42.9
Bachelor's degrees	0.0	#	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Private for-profit less-than-2-year	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subbaccalaureate credentials	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Certificates	99.9	99.9	99.7	99.9	99.5	99.7	100.0	99.9	100.0	99.9
Associate's degrees	0.1	0.1	0.3	0.1	0.5	0.3	#	0.1	#	0.1
Bachelor's degrees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Rounds to zero.

NOTE: This table shows, for example, that 56.2% of the undergraduate career education credentials awarded in 1997 were subbaccalaureate credentials. There are no standard errors for this table because it is based on population counts. Detail may not sum to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions and Institutional Characteristics (IC) data files, various years (e.g., report year 2006 uses IC 2006–07 and Completions 2005–06). Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/P75.asp>, table P75.

Table 13. Percentage of Title IV eligible postsecondary institutions that offer career education, by level of institution, sector, and field of study: 2004–05

Career field of study	Total	4-year				2-year				Less-than-2-year			
		Total	Public	Private not-for-profit	Private for-profit	Total	Public	Private not-for-profit	Private for-profit	Total	Public	Private not-for-profit	Private for-profit
All fields of study	89.8	80.1	94.4	72.5	87.0	95.5	98.1	86.2	94.5	97.1	98.8	88.8	97.5
Agricultural and natural resources	18.9	25.7	46.3	23.3	0.0	24.2	44.9	3.1	0.3	1.8	11.1	0.9	0.2
Business and marketing	55.5	69.0	88.1	60.0	73.2	66.5	95.6	23.1	36.9	20.4	55.7	42.1	12.1
Communications	27.8	46.3	68.6	42.8	22.2	25.0	44.4	4.9	2.8	3.1	13.5	2.8	1.2
Computer sciences	48.3	61.2	82.0	49.6	73.2	59.1	82.9	20.9	35.6	14.5	25.8	23.4	11.7
Education	31.1	48.7	69.7	51.3	1.6	29.3	52.3	8.4	2.0	6.3	0.8	2.8	7.6
Engineering and architectural sciences	33.8	32.6	63.0	18.9	37.0	53.4	84.3	16.4	19.5	10.1	32.8	10.3	5.9
Health care	58.2	51.8	80.2	44.3	34.1	75.8	94.0	68.9	51.7	45.1	94.7	47.7	35.7
Legal services	16.8	12.0	13.6	10.5	15.7	32.3	42.9	8.9	23.7	4.2	4.5	55.1	0.0
Personal and consumer services	45.8	36.2	62.3	31.9	8.6	52.7	77.3	8.9	29.6	51.7	34.4	9.3	58.3
Protective services	27.5	30.7	51.3	21.7	33.0	43.4	71.7	6.2	13.1	2.0	11.5	0.0	0.4
Public, social, and human services	17.3	30.2	51.4	27.3	5.1	15.3	28.2	3.6	0.1	0.1	0.0	0.9	0.0
Trade and industry	23.3	7.9	17.2	3.9	8.4	47.3	79.7	8.4	11.7	15.9	57.8	31.8	6.9

NOTE: Detail may not sum to totals because of rounding. An institution was counted as offering career education if it awarded a postsecondary credential in a career-related field of study.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions and Institutional Characteristics data file, 2004–05. Retrieved December 14, 2009, from Levesque *et al.* (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, Table 3.6.

Table 14. Percentage distribution of credential-seeking undergraduates, by curriculum area and credential goal: 2003–04

Credential goal	Total. all curriculum areas	Career education	Academic education	Undeclared
Percentage distribution by curriculum area				
All credential-seeking undergraduates	100.0	63.6	23.9	12.5
Certificate	100.0	81.1	5.7	13.2
Associate's degree	100.0	64.5	19.4	16.1
Bachelor's degree	100.0	60.5	29.9	9.6
Percentage distribution by credential goal				
Total. all credential-seeking undergraduates	100.0	100.0	100.0	100.0
Certificate	7.3	9.3	1.8	7.7
Associate's degree	40.6	41.2	33.1	52.3
Bachelor's degree	52.1	49.5	65.2	39.9

NOTE: This table shows, for example, that 81.1% of credential-seeking undergraduates seeking a certificate in 2003–04 were in career education. Also, 9.3% of credential-seeking career education undergraduates were seeking certificates. There were approximately 16 820 000 credential-seeking undergraduates in 2003-04. Detail may not sum to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04) Data Analysis System (DAS). Retrieved December 14, 2009, from <http://nces.ed.gov/surveys/ctes/tables/P42.asp>, table P42.

Table 15. Number and percentage distribution of credential-seeking beginning postsecondary students, by initial credential goal and major field: 1995–96

Initial credential goal and major field	Number	Percent
Total	2 472 000	100.0
Subbaccalaureate	1 429 000	57.8
Career education	893 000	36.1
Certificate	279 000	11.3
Associate's degree or higher	614 000	24.9
Baccalaureate	1 043 000	42.2
Career education	468 000	18.9
Academic	258 000	10.4
Other	317 000	12.8
Certificate	6 000 !	0.3
Associate's degree or higher	227 000	9.2
Other	302 000	12.2

! Interpret data with caution.

NOTE: Subbaccalaureate includes students who were initially enrolled at a less-than-4-year institution, as well as students initially enrolled at a 4-year institution who were either seeking less than a bachelor's degree at that institution or seeking to transfer to a less-than-4-year institution. All subbaccalaureate students planning to transfer are included under associate's degree or higher. Baccalaureate includes students who were initially enrolled at a 4-year institution and were either seeking a bachelor's or higher degree at that institution or seeking to transfer to another 4-year institution. Students in the "other" category have mainly undeclared majors. Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01). Retrieved December 14, 2009, from Levesque et al. (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.40.

**Table 16. Number and percentage distribution of credential-seeking undergraduates,
by career education major and credential sought: 1990, 2000, and 2004**

Career major and credential sought	Number			Percentage distribution		
	1990	2000	2004	1990	2000	2004
All undergraduates in career fields	#####	10 193 000	10 649 000	100.0	100.0	100.0
Agriculture and natural resources	85 000	122 000	134 000	0.8	1.2	1.3
Business and marketing	#####	2 792 000	2 948 000	33.9	27.4	27.7
Communications	230 000	461 000	509 000	2.3	4.5	4.8
Computer sciences	656 000	1 260 000	921 000	6.5	12.4	8.6
Education	938 000	1 211 000	1 259 000	9.3	11.9	11.8
Engineering and architectural sciences	#####	838 000	911 000	11.7	8.2	8.6
Health care	#####	1 837 000	2 321 000	16.6	18.0	21.8
Legal services	257 000	131 000	119 000	2.5	1.3	1.1
Personal and consumer services	660 000	357 000	478 000	6.5	3.5	4.5
Protective services	342 000	436 000	514 000	3.4	4.3	4.8
Public. social. and human services	103 000	208 000	192 000	1.0	2.0	1.8
Trade and industry	547 000	540 000	344 000	5.4	5.3	3.2
Bachelor's degree total	#####	4 257 000	5 251 000	100.0	100.0	100.0
Agriculture and natural resources	53 000	76 000	86 000	1.2	1.8	1.6
Business and marketing	#####	1 387 000	1 753 000	36.7	32.6	33.4
Communications	139 000	313 000	391 000	3.3	7.4	7.4
Computer sciences	235 000	383 000	450 000	5.5	9.0	8.6
Education	570 000	644 000	777 000	13.4	15.1	14.8
Engineering and architectural sciences	603 000	476 000	573 000	14.2	11.2	10.9
Health care	613 000	570 000	609 000	14.4	13.4	11.6
Legal services	33 000	32 000	32 000	0.8	0.8	0.6
Personal and consumer services	217 000	98 000	166 000	5.1	2.3	3.2
Protective services	101 000	133 000	234 000	2.4	3.1	4.5
Public. social. and human services	76 000	100 000	125 000	1.8	2.3	2.4
Trade and industry	48 000	46 000	54 000	1.1	1.1	1.0

Career major and credential sought	Number			Percentage distribution		
	1990	2000	2004	1990	2000	2004
Associate's degree total	#####	3 995 000	4 401 000	100.0	100.0	100.0
Agriculture and natural resources	28 000	39 000	42 000	0.7	1.0	1.0
Business and marketing	#####	1 114 000	1 080 000	35.8	27.9	24.5
Communications	54 000	123 000	108 000	1.4	3.1	2.5
Computer sciences	262 000	559 000	416 000	6.9	14.0	9.5
Education	255 000	405 000	449 000	6.7	10.1	10.2
Engineering and architectural sciences	463 000	272 000	300 000	12.2	6.8	6.8
Health care	717 000	816 000	1 311 000	18.9	20.4	29.8
Legal services	147 000	79 000	77 000	3.9	2.0	1.8
Personal and consumer services	173 000	84 000	153 000	4.5	2.1	3.5
Protective services	159 000	235 000	245 000	4.2	5.9	5.6
Public. social. and human services	‡	90 000	62 000	0.5	2.2	1.4
Trade and industry	159 000	180 000	157 000	4.2	4.5	3.6
Certificate total	#####	1 940 000	998 000	100.0	100.0	100.0
Agriculture and natural resources	‡	‡	‡	0.2	0.4	! 0.5
Business and marketing	514 000	291 000	115 000	24.8	15.0	11.5
Communications	37 000	25 000	10 000	1.8	1.3	1.0
Computer sciences	158 000	318 000	55 000	7.6	16.4	5.5
Education	113 000	162 000	33 000	5.5	8.3	3.3
Engineering and architectural sciences	117 000	90 000	38 000	5.6	4.7	3.8
Health care	352 000	450 000	401 000	17.0	23.2	40.2
Legal services	77 000	‡	9 000	3.7	1.0	0.9
Personal and consumer services	270 000	175 000	158 000	13.0	9.0	15.9
Protective services	82 000	68 000	35 000	4.0	3.5	3.5
Public. social. and human services	‡	‡	4 000	! 0.4	! 1.0	! 0.4
Trade and industry	340 000	314 000	134 000	16.4	16.2	13.4

! Interpret data with caution.

‡ Reporting standards not met. (Too few cases for a reliable estimate.)

Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding.

Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1989–90, 1999–2000, and 2003–04 National Postsecondary Student Aid Studies (NPSAS:90, NPSAS:2000, and NPSAS:04). Retrieved December 14, 2009, from Levesque et al. (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.10.

Table 17. Percentage distribution of credential-seeking undergraduates with each major field and level of credential sought, by sex, race/ethnicity, and age: 1990, 2000, and 2004

Major field and level of credential sought	Sex		Race/ethnicity ¹						Age		
	Male	Female	White	Black	Hispanic	Asian/ Pacific Islander	American Indian	Other	Younger than 25	25–34	35 or older
1990											
All undergraduates	44.6	55.4	76.2	10.2	8.3	4.5	0.8	†	63.7	21.2	15.1
Career education	44.1	55.9	74.8	11.6	8.5	4.3	0.8	†	59.6	23.8	16.6
Academic	44.9	55.1	80.4	7.4	7.1	4.5	0.7	†	72.2	16.0	11.8
Other	47.5	52.5	75.6	7.8	9.9	5.5	1.1	†	70.7	16.2	13.1
Bachelor's degree total	47.2	52.8	80.1	8.1	6.4	4.9	0.5	†	77.5	14.4	8.1
Career education	47.2	52.8	79.3	8.8	6.5	4.9	0.5	†	74.5	16.6	8.9
Academic	46.0	54.0	82.6	6.7	5.8	4.4	0.4	†	80.9	11.6	7.5
Other	51.0	49.0	77.7	7.8	7.4	6.3	0.9	†	84.5	10.2	5.3
Associate's degree total	42.0	58.0	75.1	10.8	8.7	4.5	1.0	†	54.2	26.1	19.7
Career education	41.8	58.2	74.3	11.9	8.3	4.4	1.0	†	51.8	27.8	20.3
Academic	43.1	56.9	78.1	8.4	8.4	4.3	0.9	†	60.1	22.4	17.6
Other	41.2	58.8	73.6	8.0	12.0	4.9	1.5	†	58.1	21.7	20.2
Certificate total	42.6	57.4	66.7	15.5	13.5	3.3	0.9	†	41.5	31.5	27.0
Career education	41.7	58.3	66.2	16.7	13.2	3.1	0.8	†	41.2	32.1	26.7
Academic	44.3	55.7	69.0	8.6	14.5	5.7	2.2	†	45.2	26.9	27.8
Other	54.0	46.0	71.8	6.6	16.8	3.5	1.3	†	40.3	29.5	30.2

Major field and level of credential sought	Sex		Race/ethnicity ¹					Age				
	Male	Female	White	Black	Hispanic	Asian/ Pacific Islander	American Indian	Other	Younger than 25	25–34	35 or older	
2000												
All undergraduates	43.6	56.4	67.2	12.3	12.1	5.7	0.9	1.8	62.6	20.0	17.4	
Career education	44.5	55.5	65.2	14.4	12.4	5.4	0.9	1.7	58.0	22.2	19.8	
Academic	41.4	58.6	71.1	8.7	11.2	6.2	0.9	1.9	72.4	15.9	11.7	
Other	43.9	56.1	69.9	7.7	13.3	5.7	1.2	2.2	66.9	16.1	17.0	
Bachelor's degree total	44.4	55.6	71.1	10.4	9.9	6.4	0.6	1.7	75.8	14.6	9.6	
Career education	46.3	53.7	69.9	11.8	9.9	6.4	0.5	1.5	71.9	16.6	11.5	
Academic	41.2	58.8	73.3	8.4	8.9	6.9	0.7	1.7	81.6	11.9	6.5	
Other	43.5	56.5	70.1	8.4	13.4	4.6	1.1	2.4	79.4	11.8	8.8	
Associate's degree total	42.2	57.8	65.9	12.9	13.1	4.9	1.2	2.0	56.4	23.3	20.3	
Career education	42.5	57.5	64.2	15.3	12.8	4.5	1.3	1.9	52.8	25.3	21.9	
Academic	41.0	59.0	68.4	9.5	14.1	5.0	1.1	2.0	62.3	20.7	17.1	
Other	44.1	55.9	71.1	5.8	12.3	7.1	1.3	2.4 !	64.6	17.7	17.7	
Certificate total	44.7	55.3	58.4	16.8	16.5	5.5	1.2	1.6	38.2	27.9	33.9	
Career education	44.6	55.4	57.0	18.4	16.7	5.2	1.2	1.5	38.1	28.4	33.5	
Academic	46.0	54.0	66.6	6.2	15.4	8.2	1.1 !	2.5	42.4	25.9	31.7	
Other	44.3	55.7	64.8	11.9	16.2	4.8 !	1.2 !	1.0 !	34.7	24.5	40.8	

Major field and level of credential sought	Sex		Race/ethnicity ¹						Age		
	Male	Female	White	Black	Hispanic	Asian/ Pacific Islander	American Indian	Other	Younger than 25	25–34	35 or older
2004											
All undergraduates	42.4	57.6	63.7	14.7	11.5	5.2	0.9	3.9	63.1	20.5	16.4
Career education	42.0	58.0	62.9	16.6	11.1	4.9	0.9	3.7	58.0	23.1	18.9
Academic	41.7	58.3	66.7	11.4	11.1	5.6	0.8	4.4	73.4	15.9	10.7
Other	46.7	53.3	62.0	11.5	14.5	6.4	1.2	4.4	69.0	16.2	14.8
Bachelor's degree total	45.3	54.7	69.0	12.0	8.8	5.7	0.8	3.8	81.0	18.1	0.9
Career education	46.7	53.3	68.5	13.8	8.2	5.4	0.8	3.3	77.6	21.2	1.1
Academic	42.1	57.9	70.5	9.4	9.0	5.9	0.7	4.5	84.6	14.8	0.6
Other	47.4	52.6	67.5	8.6	11.2	7.0	1.3	4.4	89.1	10.2	0.7
Associate's degree total	39.9	60.1	59.3	16.8	13.8	4.8	1.0	4.2	67.5	30.4	2.1
Career education	38.1	61.9	58.9	18.5	12.9	4.5	1.1	4.2	63.1	34.7	2.3
Academic	41.2	58.8	59.9	15.1	15.1	4.9	0.9	4.2	75.0	23.4	1.6
Other	47.0	53.0	60.0	12.3	16.3	5.9	1.1	4.4	74.7	23.4	1.9
Certificate total	35.0	65.0	50.6	22.4	18.3	4.3	1.1	3.3	59.1	38.4	2.5
Career education	34.2	65.8	51.1	22.9	18.1	3.8	1.0	3.1	58.6	39.0	2.5
Academic	36.7	63.3	52.9	18.3	18.4	6.5 !	0.7 !	3.2 !	69.0	29.0	2.0 !
Other	41.2	58.8	46.8	21.0	20.2	6.5	1.3 !	4.3	58.6	38.9	2.5 !

† Not applicable.

! Interpret data with caution.

¹ Black includes African American, Hispanic includes Latino, Pacific Islander includes Native Hawaiian, and American Indian includes Alaska Native. "Other" includes multi-racial students. Race categories exclude Hispanic origin unless specified.

Note: "Other" major fields include interdisciplinary studies, basic skills, other miscellaneous majors, and unreported majors. See appendix A for detail on how majors were classified. Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1989–90, 1999–2000, and 2003–04 National Postsecondary Student Aid Studies (NPSAS:90, NPSAS:2000, and NPSAS:04). Retrieved December 14, 2009, from Levesque et al. (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.12.

Table 18. Percentage distribution of credential-seeking undergraduates with each major field and level of credential sought, by disability status, parents' highest education level, and marital status: 1990, 2000, and 2004

Major field and level of credential sought	Disability status		Parents' highest education level				Marital status				
	Does not have disability	Has disability	Less than high school	High school diploma	Some college including career training	Bachelor's degree or higher	Unknown	Single	Married	Separated	Unknown
1990											
All undergraduates	†	†	6.9	23.4	16.9	26.6	26.2	73.9	24.2	1.9	†
Career education	†	†	7.9	25.3	17.0	23.1	26.8	70.4	27.3	2.3	†
Academic	†	†	4.9	20.9	17.3	35.7	21.2	81.4	17.3	1.3	†
Other	†	†	5.4	16.5	14.9	28.5	34.7	80.7	18.7	0.6	†
Bachelor's degree total	†	†	3.9	20.5	17.2	36.6	21.8	83.9	15.4	0.6	†
Career education	†	†	4.5	23.2	18.0	33.6	20.7	81.1	18.2	0.7	†
Academic	†	†	3.0	17.7	16.3	42.9	20.0	87.2	12.1	0.7	†
Other	†	†	3.1	13.5	14.8	35.2	33.5	90.7	9.1	0.2	†
Associate's degree total	†	†	9.3	27.0	18.4	20.3	25.0	67.4	30.0	2.6	†
Career education	†	†	10.0	28.0	18.4	18.6	25.0	65.2	31.9	2.9	†
Academic	†	†	7.9	26.6	19.8	24.8	20.9	73.3	24.6	2.1	†
Other	†	†	7.3	21.0	15.3	22.8	33.6	70.7	28.2	1.1	†
Certificate total	†	†	10.7	23.9	12.5	10.7	42.2	58.5	37.4	4.2	†
Career education	†	†	11.0	24.5	12.4	9.8	42.4	57.6	38.0	4.4	†
Academic	†	†	7.7	23.3	13.6	18.9	36.6	63.6	32.6	3.8	†
Other	†	†	11.3	15.0	14.0	13.0	46.8	64.4	34.9	0.7	†

Major field and level of credential sought	Disability status		Parents' highest education level				Marital status				
	Does not have disability	Has disability	Less than high school	High school diploma	Some college including career training	Bachelor's degree or higher	Unknown	Single	Married	Separated	Unknown
2000											
All undergraduates	90.8	9.2	7.2	27.5	21.5	37.7	6.1	68.8	22.5	1.3	7.4
Career education	90.9	9.1	8.3	30.1	22.1	34.1	5.4	67.1	25.9	1.6	5.5
Academic	90.1	9.9	5.2	22.0	21.3	47.0	4.6	75.9	16.8	0.8	6.5
Other	91.8	8.2	5.7	24.8	17.7	35.9	15.8	59.1	15.1	0.8	25.0
Bachelor's degree total	92.5	7.5	4.1	22.2	20.4	49.2	4.1	75.8	16.0	0.6	7.7
Career education	93.3	6.7	4.7	24.4	21.4	45.5	3.9	73.4	19.3	0.7	6.6
Academic	90.8	9.2	2.9	18.5	19.6	56.2	2.8	81.7	12.0	0.5	5.8
Other	93.3	6.7	4.8	21.3	16.6	45.7	11.7	67.4	8.0	0.2 !	24.4
Associate's degree total	89.7	10.3	8.3	31.2	24.1	30.1	6.3	65.4	26.4	1.8	6.4
Career education	89.4	10.6	9.1	33.2	24.4	27.8	5.5	65.0	28.7	2.1	4.2
Academic	89.4	10.6	7.6	27.1	24.5	34.7	6.1	69.3	22.5	1.2	7.0
Other	92.5	7.5	5.3	28.7	21.3	32.5	12.2	58.2	21.1	0.8 !	19.8
Certificate total	88.4	11.6	13.9	34.1	18.1	22.4	11.5	55.7	32.6	2.3	9.4
Career education	88.8	11.2	14.3	36.3	19.0	21.9	8.5	57.3	34.3	2.4	6.0
Academic	88.2	11.8	13.1	23.9	17.1	31.9	14.0	58.2	29.6	0.8 !	11.4
Other	84.5	15.5	10.5	23.0	9.3	16.2	41.1	35.3	17.2	2.7 !	44.8

Major field and level of credential sought	Disability status		Parents' highest education level				Marital status					
	Does not have disability	Has disability	Less than high school	High school diploma	Some college including career training	Bachelor's degree or higher	Unknown	Single	Married	Separated	Unknown	
2004												
All undergraduates	88.8	11.2	6.2	27.1	23.8	40.1	2.8	77.9	20.0	2.0	†	
Career education	88.8	11.2	6.6	28.7	24.3	37.5	3.0	74.7	22.8	2.4	†	
Academic	88.7	11.3	4.6	23.0	22.3	47.8	2.3	85.4	13.6	1.0	†	
Other	88.9	11.1	7.3	27.1	23.5	39.2	2.9	79.8	18.3	1.9	†	
Bachelor's degree total	89.9	10.1	4.1	22.6	21.9	49.6	1.9	83.7 !	15.1 !	1.2 !	†	
Career education	90.1	9.9	4.4	24.3	22.9	46.4	1.9	80.6	18.0	1.5	†	
Academic	89.3	10.7	3.4	19.8	20.4	54.8	1.7	88.6	10.7	0.7	†	
Other	90.2	9.8	4.4	21.8	19.6	52.4	1.8	88.0	10.7	1.2	†	
Associate's degree total	87.9	12.1	8.2	31.4	26.7	30.4	3.3	72.4	24.9	2.6	†	
Career education	87.8	12.2	8.4	32.5	26.6	29.1	3.4	69.3	27.7	3.0	†	
Academic	88.0	12.0	6.8	29.0	26.0	34.8	3.4	79.8	18.6	1.6	†	
Other	88.1	11.9	8.8	30.0	27.2	31.0	3.0	75.8	22.0	2.2	†	
Certificate total	86.8	13.2	10.4	34.9	20.7	27.2	6.8	67.3	28.2	4.5	†	
Career education	87.0	13.0	10.1	35.0	20.7	27.6	6.6	68.2	27.2	4.7	†	
Academic	81.3	18.7	9.4	32.7	24.5	26.7	6.7	68.7	28.2	3.0 !	†	
Other	87.4	12.6	12.7	35.3	19.1	25.4	7.6	62.6	33.7	3.7	†	

† Not applicable.

! Interpret data with caution.

NOTE: "Other" major fields include interdisciplinary studies, basic skills, other miscellaneous majors, and unreported majors. See appendix A for detail on how majors were classified. Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1989–90, 1999–2000, and 2003–04 National Postsecondary Student Aid Studies (NPSAS:90, NPSAS:2000, and NPSAS:04). Retrieved December 14, 2009, from Levesque et al. (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.13.

Table 19. Percentage distribution of credential-seeking undergraduates with each major field and level of credential sought, by work experience while enrolled, work orientation, and attendance status: 1990, 2000, and 2004

Major field and level of credential sought	Work experience while enrolled				Work orientation			Attendance status			
	Did not work	Worked total	Worked part time	Worked full time	Student who works	Employee who studies	Does not work	Full-time/ full-year	Full-time/ part-year	Part-time/ full-year	Part-time/ part-year
1990											
All undergraduates	22.6	77.4	38.4	39.0	†	†	†	†	†	†	†
Career education	22.7	77.3	35.6	41.7	†	†	†	†	†	†	†
Academic	22.5	77.5	45.2	32.3	†	†	†	†	†	†	†
Other	22.4	77.6	40.7	37.0	†	†	†	†	†	†	†
Bachelor's degree total	20.8	79.2	47.3	31.9	†	†	†	†	†	†	†
Career education	19.6	80.4	46.0	34.4	†	†	†	†	†	†	†
Academic	22.3	77.7	50.2	27.6	†	†	†	†	†	†	†
Other	23.3	76.7	46.6	30.0	†	†	†	†	†	†	†
Associate's degree total	21.4	78.6	32.7	45.9	†	†	†	†	†	†	†
Career education	21.3	78.7	30.3	48.4	†	†	†	†	†	†	†
Academic	21.8	78.2	38.2	40.0	†	†	†	†	†	†	†
Other	21.3	78.7	37.6	41.1	†	†	†	†	†	†	†
Certificate total	32.5	67.5	23.1	44.4	†	†	†	†	†	†	†
Career education	33.4	66.6	22.5	44.1	†	†	†	†	†	†	†
Academic	30.8	69.2	30.9	38.3	†	†	†	†	†	†	†
Other	21.8	78.2	20.3	58.0	†	†	†	†	†	†	†

Major field and level of credential sought	Work experience while enrolled				Work orientation			Attendance status			
	Did not work	Worked. total	Worked part time	Worked full time	Student who works	Employee who studies	Does not work	Full- time/ full- year	Full-time/ part-year	Part- time/ full-year	Part- time/ part-year
2000											
All undergraduates	20.1	79.9	41.7	38.2	49.8	30.0	20.2	42.0	13.7	22.3	22.0
Career education	19.4	80.6	39.3	41.3	47.5	33.0	19.5	39.4	14.8	23.6	22.2
Academic	20.6	79.4	48.4	31.0	57.1	22.2	20.7	49.2	11.8	19.8	19.2
Other	23.2	76.8	38.7	38.1	44.0	32.7	23.3	38.3	11.6	20.1	29.9
Bachelor's degree total	23.4	76.6	52.7	23.9	61.0	15.5	23.5	61.7	11.5	16.9	10.0
Career education	22.2	77.8	50.1	27.8	58.7	19.0	22.3	58.7	11.8	19.0	10.5
Academic	24.0	76.0	58.2	17.8	66.3	9.5	24.1	66.6	10.8	14.0	8.5
Other	29.8	70.2	48.8	21.4	54.1	16.0	29.9	62.2	11.7	13.5	12.7
Associate's degree total	15.8	84.2	33.9	50.3	44.2	39.8	15.9	27.8	13.0	28.3	31.0
Career education	15.7	84.3	33.2	51.1	44.1	40.1	15.8	28.9	13.1	28.8	29.2
Academic	15.6	84.4	35.6	48.9	45.7	38.7	15.7	26.3	13.4	28.0	32.4
Other	17.0	83.0	34.5	48.6	41.4	41.5	17.0	24.4	11.4	25.2	39.1
Certificate total	21.0	79.0	27.9	51.1	29.4	49.4	21.2	18.1	22.7	23.2	36.0
Career education	20.8	79.2	28.1	51.0	29.5	49.4	21.1	18.7	24.8	22.8	33.6
Academic	19.9	80.1	31.3	48.8	36.4	43.6	20.0	19.5	11.7	25.8	43.0
Other	23.7	76.3	21.1	55.2	20.5	55.7	23.7	9.6	12.4	24.1	53.8

Major field and level of credential sought	Work experience while enrolled				Work orientation			Attendance status			
	Did not work	Worked. total	Worked part time	Worked full time	Student who works	Employee who studies	Does not work	Full-time/ full-year	Full-time/ part-year	Part-time/ full-year	Part-time/ part-year
2004											
All undergraduates	26.1	73.9	42.5	31.4	49.5	24.3	26.1	43.5	14.3	22.6	19.6
Career education	24.8	75.2	41.1	34.1	48.0	27.2	24.8	41.9	14.9	23.5	19.8
Academic	28.2	71.8	48.1	23.7	55.6	16.2	28.2	50.7	12.4	20.4	16.5
Other	28.8	71.2	38.8	32.4	45.6	25.6	28.8	37.9	14.7	22.4	25.0
Bachelor's degree total	29.3	70.7	46.4	24.3	53.5	17.2	29.3	59.3	12.5	16.5	11.6
Career education	26.9	73.1	45.1	28.0	52.3	20.8	26.9	57.6	12.7	17.5	12.2
Academic	31.3	68.7	50.7	17.9	58.2	10.5	31.3	63.3	11.7	15.3	9.8
Other	36.9	63.1	41.6	21.5	46.8	16.3	36.9	57.8	14.4	14.3	13.6
Associate's degree total	21.5	78.5	39.3	39.2	46.7	31.8	21.5	26.9	13.0	31.3	28.8
Career education	21.2	78.8	38.2	40.6	45.3	33.4	21.2	27.4	13.0	31.9	27.7
Academic	21.8	78.2	43.5	34.7	50.9	27.3	21.8	26.3	13.2	31.0	29.6
Other	22.2	77.8	38.3	39.5	46.6	31.1	22.2	24.7	12.5	29.5	33.3
Certificate total	29.5	70.5	32.4	38.1	36.9	33.6	29.5	23.5	33.8	17.4	25.4
Career education	29.0	71.0	32.9	38.1	37.3	33.7	29.0	22.8	34.6	17.7	24.9
Academic	30.2	69.8	35.1	34.8	42.5	27.3	30.2	31.3	27.8	14.9	26.0
Other	31.5	68.5	27.4	41.1	32.0	36.5	31.5	22.6	31.4	17.1	28.9

† Not applicable.

NOTE: "Other" major fields include interdisciplinary studies, basic skills, other miscellaneous majors, and unreported majors. See appendix A for detail on how majors were classified.

Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1989–90, 1999–2000, and 2003–04 National Postsecondary Student Aid Studies (NPSAS:90, NPSAS:2000, and NPSAS:04). Retrieved December 14, 2009, from Levesque et al. (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.15.

Table 20. Percentage distribution of credential-seeking undergraduates in each major field and career major, by level of credential sought: 1990, 2000, and 2004

Major field and specific career major	1990			2000			2004		
	Certif- icate	Associate's degree	Bachelor's degree	Certif- icate	Associate's degree	Bachelor's degree	Certif- icate	Associate's degree	Bachelor's degree
All undergraduates	15.9	36.4	47.7	14.7	39.2	46.1	7.3	40.7	51.9
Career education	20.5	37.5	42.0	19.0	39.2	41.8	9.4	41.3	49.3
Academic	5.5	32.6	61.9	5.0	37.4	57.6	1.7	32.6	65.7
Other	8.8	38.0	53.2	13.2	44.8	42.0	7.5	52.2	40.3
Career major									
Agriculture and natural resources	4.5	33.5	62.0	6.2 !	31.7	62.1	3.7 !	31.7	64.6
Business and marketing	15.0	39.5	45.5	10.4	39.9	49.7	3.9	36.6	59.5
Communications	16.0	23.5	60.5	5.4	26.6	67.9	2.0	21.2	76.8
Computer sciences	24.1	40.0	35.9	25.2	44.4	30.4	6.0	45.2	48.8
Education	12.1	27.2	60.8	13.3	33.5	53.2	2.7	35.6	61.7
Engineering and architectural sciences	9.9	39.1	51.0	10.8	32.4	56.8	4.2	32.9	62.9
Health care	20.9	42.6	36.4	24.5	44.4	31.1	17.3	56.5	26.2
Legal services	29.9	57.3	12.8	15.3	60.4	24.3	8.0	65.0	27.1
Personal and consumer services	40.9	26.2	32.9	49.1	23.5	27.5	33.1	32.1	34.8
Protective services	24.0	46.4	29.6	15.6	54.0	30.5	6.7	47.7	45.5
Public. social. and human services	7.6	18.6	73.8	8.9	43.1	48.0	2.2 !	32.5	65.3
Trade and industry	62.1	29.1	8.8	58.1	33.4	8.5	38.8	45.6	15.5

! Interpret data with caution.

NOTE: "Other" major fields include interdisciplinary studies, basic skills, other miscellaneous majors, and unreported majors. See appendix A for detail on how majors were classified.

Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1989–90, 1999–2000, and 2003–04 National Postsecondary Student Aid Studies (NPSAS:90, NPSAS:2000, and NPSAS:04). Retrieved December 14, 2009, from Levesque et al. (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.11.

Table 21. Percentage of credential-seeking 1995–96 beginning postsecondary students who attained a credential or were still enrolled by June 2001, and percentage distribution of these students in terms of their attainment and enrolment status in 2001, by initial credential goal and major field

Initial credential goal and major field	Attained a credential or were still enrolled	Attainment and enrollment status					
		Highest credential attained				No credential, still enrolled	No credential, no longer enrolled
		Any credential	Certificate	Associate's degree	Bachelor's degree		
All students	69.7	54.7	11.5	10.3	32.9	15.0	30.3
Subbaccalaureate	60.4	44.9	18.4	16.1	10.5	15.5	39.6
Career education	59.9	48.4	25.4	15.4	7.5	11.6	40.1
Certificate	65.6	62.2	56.9	4.6	0.7	3.4	34.4
Associate's degree or higher	57.4	42.1	11.2	20.3	10.6	15.3	42.6
Academic	63.6	43.5	3.0	20.6	20.0	20.1	36.4
Certificate	83.3	34.6	27.4	4.5	2.8	48.7	16.7
Associate's degree or higher	63.0	43.8	2.3	21.0	20.5	19.3	37.0
Other	59.6	35.9	9.6	14.5	11.8	23.6	40.4
Baccalaureate	82.3	68.0	2.0	2.5	63.5	14.3	17.7
Career education	82.5	68.6	2.2	2.9	63.5	13.8	17.6
Academic	82.5	69.4	1.7	2.0	65.7	13.2	17.5
Other	81.9	66.1	1.9	2.4	61.8	15.8	18.1

! Interpret data with caution. Standard errors were more than one-third as large as the estimate.

NOTE: Subbaccalaureate includes students who were initially enrolled at a less-than-4-year institution, as well as students initially enrolled at a 4-year institution who were either seeking less than a bachelor's degree at that institution or seeking to transfer to a less-than-4-year institution. All subbaccalaureate students planning to transfer are included under associate's degree or higher. Baccalaureate includes students who were initially enrolled at a 4-year institution and were either seeking a bachelor's or higher degree at that institution or seeking to transfer to another 4-year institution. Students in the "other" category have mainly undeclared majors. Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

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

Table 22. Percentage distribution of credential-seeking 1995–96 beginning postsecondary students who had, by 2001, obtained each credential as their highest credential, by credential type and major field: 2001

Credential type and major field	Percent
Total	100.0
Subbaccalaureate	38.5
Career education	33.4
Certificate	19.2
Associate's degree or higher	14.2
Academic	4.2
Certificate	0.5
Associate's degree or higher	3.7
Other	0.9
Baccalaureate	58.8
Career education	33.6
Academic	24.8
Other	0.4 !
Unknown	2.8

! Interpret data with caution. Standard errors were more than one-third as large as the estimate.

NOTE: Subbaccalaureate includes students who were initially enrolled at a less-than-4-year institution, as well as students initially enrolled at a 4-year institution who were either seeking less than a bachelor's degree at that institution or seeking to transfer to a less-than-4-year institution. All subbaccalaureate students planning to transfer are included under associate's degree or higher. Baccalaureate includes students who were initially enrolled at a 4-year institution and were either seeking a bachelor's or higher degree at that institution or seeking to transfer to another 4-year institution. Students in the "other" category have mainly undeclared majors. Estimates include students from the 50 states, DC, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubs2008/2008035se.pdf>.

Source: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01). Retrieved December 14, 2009, from Levesque *et al.* (2008), <http://nces.ed.gov/pubs2008/2008035.pdf>, table 3.44.