
EDUCATIONAL ATTAINMENT SKEWED IN CALIFORNIA COMMUNITY COLLEGES?

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We address the emphasis of the California Community College system upon credentials in their effort to document student outcomes. Statewide curricular awards (associate degrees and certificates) were collected over a four-year period. Data were organized descriptively and analyzed in order to identify long term trends. These curricular trends are analyzed in relation to their institutional implications and the labor market. There is evidence of a trend toward increasing training for low-wage vocations in the California Community College curriculum, including in traditionally academic areas.

As a topic, the educational attainment of community college students has surfaced almost continually since the 1960s and focuses on student outcomes using university transfer rates, credentials awarded, and program completion as measures. Indeed, a February 2007 report on state policy and student educational attainment in California (Shulock & Moore, 2007) stirred this longstanding controversy, arguing that student outcomes were woefully inadequate as a consequence of state policies. Research scholars and practitioners often disagree on the topic of attainment, and these tensions are often a result of differing perspectives as well as differing purposes in their work (Cohen, 2005). Scholars

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may be critical of institutional performance while practitioners may laud their colleges' outcomes even though both may use similar measures.

However, measures of educational attainment are disparate, and rates of university transfer and achievement of a credential are mere proxies for student and institutional performance. However, these proxy measures are commonly used in assessing (and in influencing funding of) institutions. For example, Dougherty (1994) takes community colleges to task for low student attainment of baccalaureate degrees through the transfer processes, an issue that seems to surface again by implication in the Shulock and Moore (2007) report. In spite of a large body of literature that suggests that community colleges might impede student attainment, this literature is overly focused upon university transfer and baccalaureate attainment, ignoring other measures of student or institutional outcomes and the uneven influence of student characteristics (Levin, 2007). The effects of an institution on student attainment are significantly less than the effects of student background characteristics (Pascarella & Terenzini, 2005). Thus, the institution has limited control over how students perform; their social, economic, and educational backgrounds all affect the likelihood of attaining a degree or credential. Nonetheless, considerable effort by both research scholars and practitioners is devoted to examining student educational attainment at community colleges and, subsequently, attaching values to different levels of attainment.

Such efforts do not, however, endeavor to explain how some measures of attainment might impinge upon others. Historically, two sets of measures have been examined—credential attainment and university transfer rates—but they have not been used together as either companion or confounding variables. Furthermore, credentials in and of themselves have been used as measures of educational attainment, but they have not been disaggregated to explain if they are companion or confounding variables. In other words, does one credential lead to another (certificate to associate degree or associate degree to baccalaureate degree), or does the attainment of one impede the attainment of a subsequent credential? Furthermore, trends in credentialing—if examined at all—are used as measures of student educational attainment; rarely are they seen as signifying institutional purposes. This is not the case in the current analysis. Indeed, we perceive the awarding of a particular degree or credential as a possible indication of an institutional behavior that favors one kind of curriculum over another, with potentially long-term implications.

CREDENTIALS

The American community college frames its programs through two general credentials—the associate degree and the vocational or occupational certificate (Cohen & Brawer, 2003). Normatively, the associate degree frames a curriculum that addresses both practical and theoretical knowledge, and encompasses what is referred to as general education. It includes areas generally classified as occupational or university transfer. The norms for the certificate pertain to a curriculum that addresses the practical skills needed for a specific job. While students may devote differing spans of time to either type of program, the associate degree is usually viewed as a two-year program and the certificate as one-year or less, assuming full time enrollment. These two awards represent the two dominant aspects of the curricular function of the community college—one is an academic function, the other, vocational. These have arguably been the most highly regarded curricular ends by both policymakers and the general public, and other program and course offerings, such as basic skills, English as a Second Language, and continuing education, are expected to move students into either certificate or associate degree programs.

However, there is also a combination of these two dominant curricular forms. We refer to this as a “hybrid curriculum” because it reflects inconsistent or incoherent ends of educational programs that are both vocationally and academically oriented (Kliebard, 2004). In hybrid programs, multiple and often opposing curricular visions have been intertwined institutionally into a single curriculum. Such a condition has been termed “new vocationalism,” and refers in part to the use of a customary academic curricular structure where instruction focuses on job or employment skills (Levin, 2001, p. 174). One example of new vocationalism is an associate degree program in environmental sciences where instruction is tied to employment specifications rather than to those of academic disciplines.

We investigated the overall curriculum of the California Community College system through a focus on its credentials. We have analyzed the ends of the California Community College curriculum (associate degrees and certificates) in order to understand and evaluate long-term curricular trends in relation to larger social, political, and economic developments. In analyzing the institutional ends of the California Community College system, we identify and chart changes in institutional priorities over time. Overall, we find that the California Community College curriculum has become increasingly vocationalized, and that the major

shift toward vocationalization has occurred in traditionally defined academic curricular areas. We find this trend problematic, with significant implications both for students who may find themselves in unrewarding and low wage jobs, and for a state that is clambering for highly skilled employees (Baldessare & Harnak, 2005).

THE INVESTIGATION

Data

The Management Information Services (MIS) unit of the California Community Colleges Chancellor's Office collects data from the 72 districts, 110 (as of 2008) campuses, 64 approved educational centers, and 20 separately reported district offices of the California Community College system. Starting with the 1992–1993 academic year, the MIS unit began posting statewide and institutional data on an online database called the Chancellor's Office Data Mart. This information can be accessed by the public through the Chancellor's Office Web site. The database offers subject queries pertaining to California Community College demographics, awards, persistence and success rates, institutional services, and faculty.

This investigation focused specifically on the Student Program Awards query with some use of the Student Demographics—Annual and Full Time Equivalent Students (FTES) queries for longitudinal data on California Community College student populations. The Student Programs Awards query consists of both statewide and institutional data on certificates and associate degrees in 23 curricular areas, which are further broken down into various program areas (for example, under the curricular area of law are two program areas, general law and paralegal).

The California Community College System offers two types of awards. The first type is the associate degree (either an associate of arts or associate of science). Degree requirements vary by district, but the basic requirement calls for 60 credit units with an overall GPA of 2.0 in roughly five general education areas. An associate degree can be used by a student either as a terminal degree or as a mechanism for transfer to a four-year college or university. (Associate degrees are not required for a student to transfer from a California Community College to a university, and many students transfer before completing their degree.) The second type of award is the certificate. Currently, certificates can

Table 1. California Community College curricular areas

Agriculture/Natural Resources	Humanities (Letters)
Architecture/Related Tech	Information Tech
Biological Sciences	Interdisciplinary Studies
Business/Management	Law
Commercial Services	Library Science
Education	Mathematics
Engineering/Industrial Tech	Media & Communications
Environmental Science & Tech	Physical Sciences
Family & Consumer Science	Psychology
Fine and Applied Arts	Public & Protective Services
Foreign Language	Social Sciences
Health	

be earned in every curricular area and in most program areas. There are two basic types of certificates including the locally approved certificate (which ranges from 48 hours to 17 units of credit) and the state approved or chancellor's office approved certificate (which ranges from 18 units to more than 60 units of credit). Certificates are specifically designed to be a marker of job training and are, therefore, awards for students who seek direct employment (although some credits of the chancellor's office approved certificate could be used for transfer to a four-year institution). For example, the Riverside Community College District (2006) *Student Handbook* describes certificates as "the best evidence" that a student has "specific, technical skills that an employer seeks," and it notes that "some employers actually require it as a condition of employment or for reclassification for higher pay" (p. 11).

In this investigation, data collection consisted of collecting, organizing, charting, and analyzing Student Programs Awards query data on statewide degrees and certificates. All 23 curricular areas (see Table 1) and their respective program areas were analyzed in two-year increments from 1993–2006. This enabled us to chart trends over time. Data analysis was descriptive; data were converted into charts in order to establish longitudinal trends and to calculate growth rate trends. These trends are connected to educational and employment outcomes for students.

FINDINGS

Over the past 14 years, there was an increase in both the number of actual students and full-time enrolled (FTE) students in California

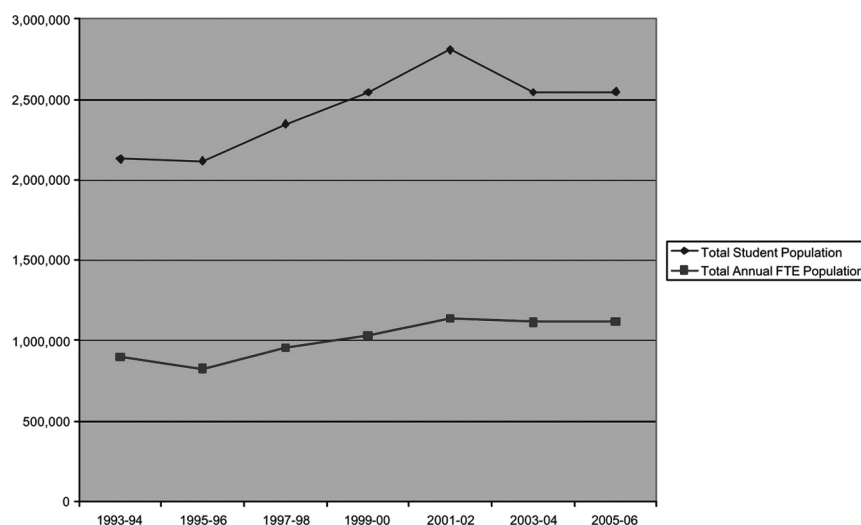


Figure 1. Total and FTE student population, 1995–2006.

Community Colleges. Figure 1 charts the growth of these populations. Between 1993 and 2006, the total number of students (calculated by annual headcount) increased by 20%, growing from over 2.1 million in 1993–1994 to over 2.5 million in 2005–2006. The FTE population increased 24.5% over this same period, growing from over 900,000 to over 1.1 million.

From 1993 to 2006, the total number of awards (both associate degrees and certificates) earned in California's community colleges also increased substantially. The 51,983 associate degrees awarded in 1993–1994 grew to 79,467 in 2005–2006. This was an increase of 53% (27,484 more degrees). Certificates grew from 23,002 in 1993–1994 to 42,321 in 2005–2006 (an 84% increase and 19,319 more certificates). While the increase in attainment of both degrees and certificates more than doubled the rate of population growth, certificates grew considerably more than degrees over this four-year period (see Figure 2).

The substantial increase of vocational certificates in relation to academic degrees suggests a changing California Community College curriculum. We analyzed the ratio between academically-oriented awards (degrees) and vocationally-oriented awards (certificates) to measure changes in the overall ratio of awards granted per year. We categorized the major curricular areas of California community colleges into three basic orientations, using credentials awarded as

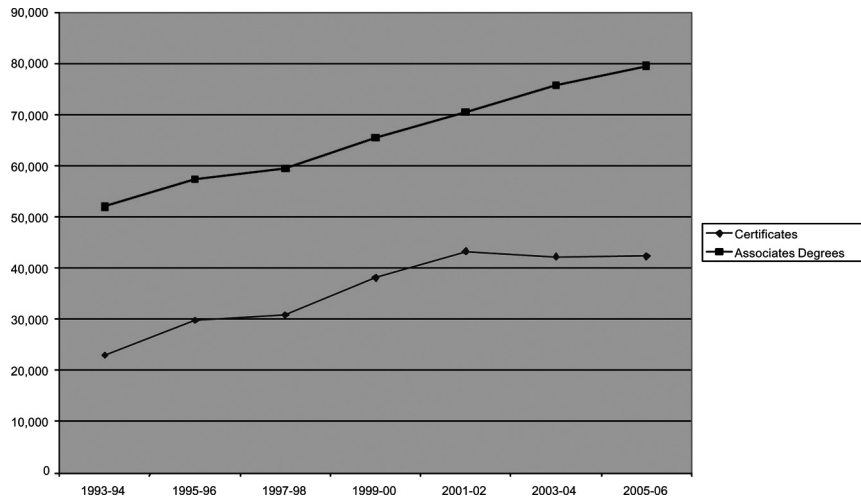


Figure 2. California statewide awards, 1993–2006.

our criterion. These categories were used to classify the 23 curricular areas based on the ratio of awards granted. If the majority of awards granted (>55%) in a curricular area were either degrees or certificates, the curriculum was classified as academic or vocational, respectively. If the ratio of degrees and certificates was less than 55% but greater than 45%, the curriculum was classified as hybrid, as the awarding of degrees and certificates is nearly equal. Figure 3 displays the three categories: academic, hybrid, and vocational.

Figure 3 shows that in the 1993–1994 academic year, the statewide curriculum was overwhelmingly academic in orientation, using our proxies of degree and certificate percentages for general orientation of programs. Of the curricular areas, 67% awarded a majority of associate degrees, while only 16.5% of curricular areas awarded a majority of certificates. However, there was a steady decline in academic orientation over the next 14 years and a steady increase in vocational orientation. By the 2005–2006 academic year, only 35% of curricular areas awarded a majority of associate degrees, while 43% of curricular areas awarded a majority of certificates.

This general trend also held in specific curriculum areas (see Table 1 for a list of curricular areas), although not all curricular areas were equally affected. Nonetheless, 91% of the curricular areas (21 of 23) saw an overall increase in certificates between 1993 and 2006. In some curricular areas the change was substantial, and many of the

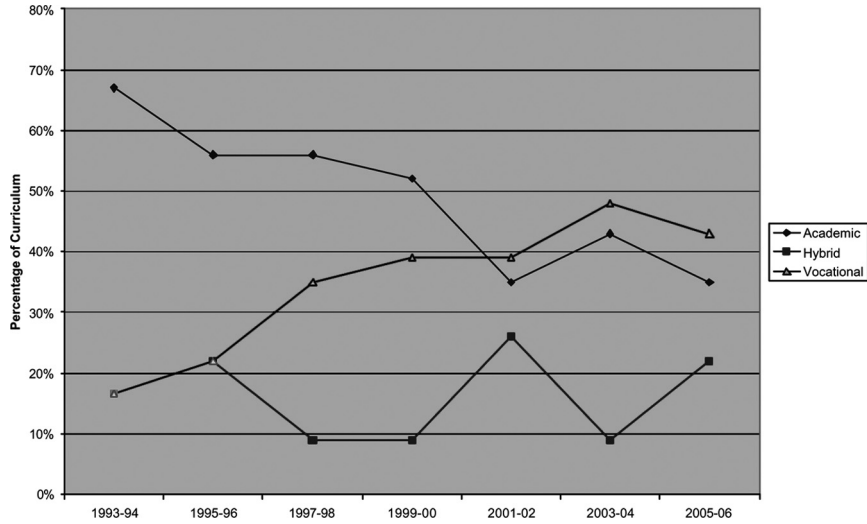


Figure 3. Academic, hybrid, and vocational curricula, 1993–2006.

most dramatic increases took place in what are considered traditionally academic curricular fields. Figure 4 displays the percentage of certificates in four traditional academic areas—biological sciences,

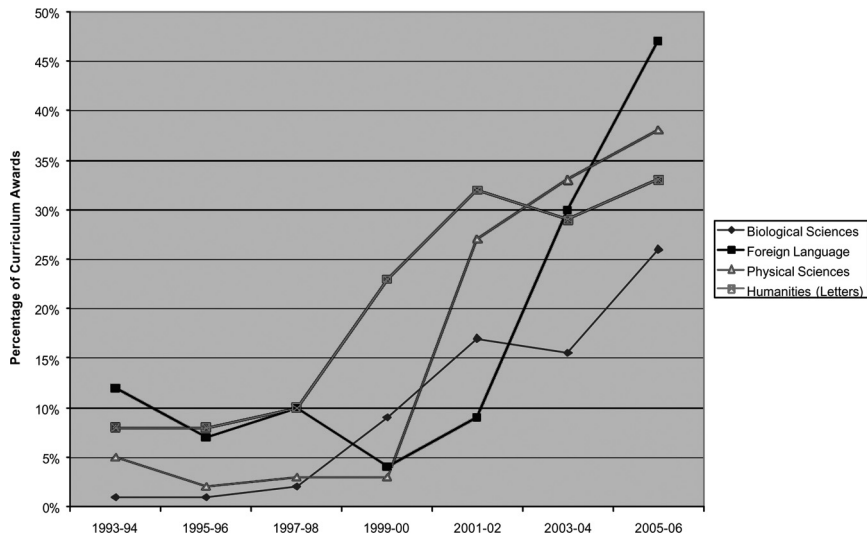


Figure 4. Vocationalization of the traditionally academic curriculum, 1993–2006.

foreign language, physical sciences, and humanities, between 1993–1994 and 2005–2006. For example, only 1% of total awards in the biological sciences were certificates in 1993–1994, but that reached 26% (one in four awards) by 2005–2006. Similarly, certificates grew from 5% to 38% in the physical sciences, from 12% to 40% in foreign language, and from 8% to 33% in humanities (roughly one in three awards in each of these areas).

Similarly, three applied science or social science fields (education, environmental science and technology, and media and communications) moved from awarding a majority of academic degrees to a majority of certificates in this time period. Certificates rose from 29% of the total awards in media and communications (169 certificates) in 1993–1994 to 60% of the total awards in this field (782 certificates) in 2005–2006. This is more than a 360% increase. Certificates increased 2,200% in environmental science and technology, rising from 44% of awards (11 certificates) in 1993–1994 to 90% (253 certificates) in 2005–2006. The percentage of certificates in education grew from 19% to 53% during this time period, and these numbers are even more dramatic when one considers the 320% decrease in associate degree awards in education between 1993–1994 and 2005–2006 (a drop from 1,352 to 323 degrees).

The academic field of mathematics has also experienced a dramatic change. In one year (1995–1996), mathematics awarded no certificates, and even in 1997–1998 and 1999–2000 it awarded 5 or fewer (1%) certificates. However, the percentage of certificates in mathematics rose from 1% in 1999–2000 to 19% (76 certificates) in 2001–2002 before leveling off at 11% (47 certificates) in 2005–2006—a growth rate of 840%.

DISCUSSION

Effects of Credentials

There is a clear trend towards increasing credentialism and vocationalization in the California Community College curriculum. What have been the effects of this change? While the awarding of associate degrees has been steadily rising over the last 14 years, there has been a shift across the board toward more short-term certificates, and this trend seems to be becoming more pronounced. Has increased vocationalization negatively affected the attainment of associate degrees? Between 1995 and 2006, the average rate of associate degree growth was 7.3%, while the average growth rate of certificates was 11.5%.

However, the most substantial growth in certificates occurred between 1995 and 2002. After 2002, the growth rate of certificates falls and begins to stagnate. Associate degrees, in contrast, show strong growth rates over the entire period, although growth rates have been declining steadily since 2000. Based upon the steady increase of associate degree attainment over the last 14 years and the strong rates of growth for this award, vocationalization—in other words, the awarding of more and more certificates—may not have negatively affected the attainment of associate degrees.

Has vocationalization affected university transfer rates? According to transfer data compiled by the California Postsecondary Education Commission (2005) and the California Community College Chancellor's Office ARCC Report (2007), statewide transfer rates to four-year colleges and universities from 1998–1999 to 2004–2005 increased, although the rate of growth is uneven and transfer numbers fell between 2004–2005 and 2005–2006. For example, 55,150 students transferred to California State University and University of California campuses during the 1998–1999 academic year; 66,104 transferred in 2005–2006 (20% growth). There were 25,920 transfers to in-state private and out-of-state institutions in 2000–2001 and 28,314 in 2005–2006 (9% growth). Overall, the number of transfer students rose from 85,035 in 2000–2001 to 94,418 in 2005–2006 (11% growth), although there was a 4% drop in overall transfers between 2004–2005 and 2005–2006 (3,996 students). The average rate of growth in transfers from 2000–2001 to 2005–2006 was 2.2%.

A comparison of the average growth rates of transfer students (2.2%) with the comparable average growth rates for certificates (3.9%) and associate degrees (6.7%) indicates that community college transfer lags behind the awarding of both certificates and associate degrees. These data suggest that the outcomes of the California Community College curriculum have taken on a more credential emphasis, which prizes short-term certificates and associate degrees, and which may—over time and perhaps inadvertently—affect the transfer of students to four-year institutions.

Economic and Workforce Outcomes

Given the economic benefits to students of higher educational attainment (Bailey, Keinzl, & Marcotte, 2004; Grubb & Lazerson, 2004; Mishel, Bernstein, & Allegretto, 2007), this credential and vocational emphasis may indeed be a troubling trend. Indeed, as Grubb and Lazerson (2004) show, the average man with some college earns

\$35,704. With an associate degree he earns \$42,547, and with a bachelor's degree, \$63,216. The average woman with some college earns \$21,276, with an associate degree earns \$25,590, and with a bachelor's degree \$35,083. Women make much less than men at all three of these levels of educational attainment (although this might be skewed by certain lower wage professions—such as teaching—that attract more women than men). However, average salaries at each level of educational attainment also vary by race, with Latina women earning the lowest amounts of all (according to Grubb and Lazerson, a Latina with some college earns, on average, \$19,865, with an associate degree earns \$22,959, and with a bachelor's degree, \$33,283). Similarly, as Mishel et al. (2007) note, although wage increases are associated with higher levels of educational attainment for all students, White men experience the most substantial increases. However, community colleges serve large and growing numbers of African American, Latino, Native American, and other students traditionally underrepresented in higher education—and are, based on our findings, awarding them with more and more short-term certificates. Thus, the trend toward vocationalization of the California Community College curriculum may mean that community colleges are increasingly preparing these underprivileged groups for low skill, low wage jobs and thereby providing them with limited opportunities for social or economic advancement.

The assumption that more and more certificates are needed in order to meet the demands of an increasingly technological workforce (see, for example, California Community Colleges Chancellor's Office, 2001) may be misguided. According to data from the U.S. Department of Labor, of the projected 30 fastest growing occupations between 2004 and 2014, 15 require a bachelor's degree or higher credential. Of the 30 fastest growing occupations, 8 require an associate degree; only one requires a certificate (Hecker, 2005). In addition, in 2004 roughly 24% of jobs in America required a bachelor's or higher degree. However, between 2004 and 2014, 36% of the 18.9 million new jobs that are projected to arise will be filled with recipients of a bachelor's or higher degree. In contrast, in 2004 almost 29% of jobs required some college, including an associate degree or certificate; this percentage is projected to remain the same over the 2004–2014 period (Hecker, 2005). These data compel us to ask: If more jobs requiring a bachelor's degree will be available in the coming years than those requiring an associate degree or certificate, are California Community Colleges taking the wisest course for their students by placing an increasing institutional emphasis on short-term certificates and associate degrees?

Although educational systems alone cannot solve labor market problems or produce economic growth (Grubb & Lazerson, 2004; Shaw, Goldrick-Rab, Mazzeo, & Jacobs, 2006), institutional practices can and do affect students' economic outcomes in several ways. First, college admissions practices can block potential students from entry and, therefore, deny the required education and training for specific jobs. Second, college placement policies can stream students into particular curricular areas and either deny or provide them access to specific jobs. Third, institutional systems can develop and promote certain curricular structures over others. For example, based upon its structure, a community college curriculum can prepare students for a particular kind of employment or can lead students toward further education (e.g., university transfer). Curricular emphases, thus, affect the types of jobs students can attain as well as the income they command from these jobs. Baccalaureate attainment, for example, has been equated with greater economic benefits to students than associate degree attainment, and considerably more than high school completion alone (Bailey et al., 2004; Grubb & Lazerson, 2004; Mishel et al., 2007). Furthermore, specific fields command considerably higher salaries than others, and many of these fields require a bachelor's or higher degree (U.S. Department of Labor, 2006). It is clear that institutions affect students' economic outcomes, and this influence may stem from how institutions structure and promote various program options and credentials.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

As this investigation clearly illustrates, several California Community College curricular areas have drastically changed their academic orientation to a more vocational one. The increasing vocational focus may not currently hinder the educational attainment of students. But, over time, an institutional focus on short-term certificates as opposed to associate degrees and university transfer may, indeed, have such an effect (Roksa, 2006). Furthermore, this vocational emphasis may be preparing more and more community college students for low skill, low wage jobs in sectors where employment demand does not keep pace with supply. Thus, researchers and policymakers in California should keep their eyes on two potentially troubling trends. First, while the increase of certificates has not negatively affected student attainment of associate degrees across the board, in 39% of curricular areas there has been a marked decrease in associate degree attainment and a marked increase in certificates. Further research could compare

growth rates in associate degrees, certificates, and university transfers by curricular area in order to examine this phenomenon more fully and identify its effects on student educational attainment. Second, the California Community College curriculum is clearly producing more short-term certificates and associate degrees than transfer students, based upon comparative growth rates for transfer students and community college awards. Indeed, if transfer rates level off, and certificates and associate degree rates continue to grow, an institutional focus on short-term awards may negatively affect the community college's role in the facilitation of student transfer.

Institutional responsibility for students' educational attainment is both limited and complex, but institutional behaviors, such as the promotion of credentials, may have unintended consequences. These may include reducing university transfer rates or increasing short-term training for low skill jobs and low wages. While community colleges use measures such as credentials awarded and transfer rates to highlight student educational attainment and to legitimize institutional outcomes, these measures need to be used with caution so that they do not obscure trends that show the unintended consequences of one kind of action (e.g., awarding of more and more credentials). The unintended consequences of credentialing for low wage jobs (including possibly hindering the community college transfer function and preparing students for jobs in slow growth employment sectors) suggest that the California Community College system—and by implication other state systems—needs to review and assess its current programming priorities. Doing so will allow it to ascertain ways in which trends in credentialing can be reconciled with a labor market and society that demands—and rewards—fewer low skill, low wage workers and greater numbers of bachelor's degree recipients.

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