Get With the Program:
Accelerating Community College Students'
Entry into and Completion of Programs of Study

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Abstract

Most students who enter higher education through a community college fail to earn a postsecondary credential. One reason for this is that many students do not enter a college-level program of study. This paper presents a practical method for measuring rates of program entry and completion using data on students' actual course-taking behaviors rather than declared major or intent. This method is used to track the progress and outcomes of first-time college students over five years using data from an anonymous sample of community colleges. The analysis shows that students must enter a program of study as soon as possible. Students who do not enter a program within a year of enrollment are far less likely to ever enter a program and therefore less likely to earn a credential. The paper suggests ways community colleges can rethink their practices at key stages of students' experience to substantially increase rates of student completion.

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1. Introduction

Community colleges have played an essential role in expanding access to higher education, but their completion rates remain low. Of first-time college students who enrolled in a community college in 2003–04, fewer than 36% earned a postsecondary credential within six years (Radford, Berkner, Wheeless, & Shepherd, 2010). To earn a credential, students must first enter a program of study by taking and passing multiple college-level courses in a field. One reason for low community college completion rates that has not received enough attention is that many students fail to enter a program of study in the first place.

Most community colleges offer an impressive array of programs. Yet, many new students enroll in community colleges without clear goals for college and careers (Gardenhire-Crooks, Collado, & Ray, 2006), and colleges typically offer little guidance to help them choose and successfully enter a program of study (Grubb, 2006; Rosenbaum, Deil-Amen, & Person, 2006). Research suggests that individuals presented with many options often do not make good decisions, and there is evidence that community colleges could be more successful in helping students persist and complete a program of study if they offered a set of tightly structured program options whose requirements and expected outcomes are clearly defined (Scott-Clayton, 2011).

On the way toward entering a program of study, many students are sidetracked by remedial courses, for which they do not receive college credit. Among younger students, a majority take at least one developmental course (Bailey, 2009). However, community college developmental instruction is generally narrowly focused on helping students take and pass college-level math and English courses rather than preparing them for success in college-level programs of study more generally. Moreover, research indicates that community college developmental education is of questionable effectiveness in achieving even the narrower goal of preparing students to pass college-level courses in math and English (Bailey, Jeong, & Cho, 2010; Calcagno & Long, 2008). As a result, developmental education becomes a dead end for many students.

Even among students who enter a college-level program of study, many fail to complete for a variety of reasons. Often, information about course requirements and sequences, learning outcomes, and connections between community college programs

and further education and employment is not clearly delineated for students (Rosenbaum et al., 2006). Sometimes, the courses that students need to take in order to graduate are not offered when students need to take them. And while community college departments closely monitor enrollment in their courses, often they do not know which students are pursuing programs of study in their fields and thus do not track students in their programs to ensure that they make steady progress toward completion.[1] Research on K-12 education finds that schools that are able to achieve greater gains in student outcomes are characterized by higher levels of "instructional program coherence," which involves "a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate and that are pursued over a sustained period of time" (Newmann, Smith, Allensworth, & Bryk, 2001, p. 299; see also Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010). Academic programs at community colleges often lack instructional program coherence, which likely creates barriers for students seeking postsecondary credentials in those fields (Jenkins, 2011).

A major focus of recent community college reform efforts has been on revamping developmental education. Achieving the Dream (ATD), a major initiative involving over 150 colleges in numerous states, is the foremost example of this trend.[2] Developmental education outcomes certainly need to be improved, and ATD colleges have introduced many promising reforms, yet overall completion rates at participating colleges have not yet increased (Rutschow et al., 2011). One reason may be that while Achieving the Dream has sought to increase the rate at which academically underprepared students complete the developmental sequence and take and pass college-level courses, particularly in math and English, it has not focused on helping such students enter and complete college-level programs of study. Trying to improve program completion rates by focusing on developmental education may place too much of the onus for student success on the developmental English and math faculties and advisors and other student services staff involved in the intake process. Faculty in the college-level academic

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[1] Two notable examples of community colleges that have well-developed systems for tracking their students into and through programs of study are Miami Dade College and Valencia College, both in Florida.
[2] For more information, see www.achievingthedream.org.

programs need to share responsibility for recruiting students into their programs and helping them complete program requirements. As it is, they often have little interaction with the academically underprepared students who are referred to developmental education, and these students may give up because they become discouraged with the drudgery of remedial instruction and do not see a clear pathway to success in college.

This paper is about the critical importance of helping community college students get into and through a program of study and how colleges can rethink their practices to increase rates of program entry and completion. It presents a simple method that community colleges can use to begin to measure rates of program entry and completion using data on students' actual course-taking behaviors rather than on their declared program of study or intent, which can change and are unreliable indicators of student behavior. This method is used to track the progress and outcomes of first-time college students over five years using data from an anonymous sample of community colleges.[3]

The analysis shows not only that students must enter a program of study to earn a credential but also that it is critical that they do so as quickly as possible. Students who do not enter a program of study within a year of enrollment are far less likely to ever enter a program and therefore less likely to complete and earn a credential. The analysis also shows that a substantial number of students attempt to enter a program of study but fail to do so, and that among those who do enter a program of study, many are still enrolled several terms later without having completed the program. Finally, the analysis reveals that completion rates and the types of awards given vary considerably among different community college program areas. For a college's overall completion rate to improve, therefore, every academic department must find ways to increase rates of program entry and completion.

Because the problem of low community college completion rates is systemic, the approach community colleges have typically taken in the past of adopting discrete "best practices" and trying to bring them to scale will not work to improve student completion

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[3] The sample includes $N = 20,220$ first-time college students who enrolled in one of an anonymous group of community colleges in the same state in 2005–06. The sample excludes previous dual-enrollees, students who ever took a course before summer 2005, and students who received a bachelor's degree in less than three years ($N = 3,646$). A total of 23 institutions make up this sample, and we have access to each institution's transcript records, student-level characteristics, test scores, and institutional transfer information.

on a substantial scale. Rather, colleges need to implement a "best process" approach in which faculty, staff, and administrators from across the college work together to review programs, processes, and services at each stage of students' experience with the college. They must also rethink and better align their practices to accelerate entry into and completion of programs of study that lead to credentials of value. The effect of this organizational redesign process should be to strengthen pathways to program entry and completion. The final section of this paper presents a series of questions that colleges can ask to guide the redesign process. It also contains suggestions for concrete steps colleges might take, after a systematic review of their practices, to accelerate the rate at which students enter and complete programs of study. These ideas reflect principles of effective practice that are supported by research on student success and institutional effectiveness. Finally, the paper draws on research on organizational effectiveness and improvement to identify management practices that colleges can use to support and sustain the redesign process and thus ensure continuous improvement in student completion rates over time.

2. A Critical Intermediate Milestone: Entering a Program of Study

In their efforts to improve student outcomes, community colleges are increasingly recognizing the value of tracking the progression of cohorts of students across intermediate milestones along the way to completion of college credentials (Leinbach & Jenkins, 2008; Moore, Shulock, & Offenstein, 2009; Offenstein & Shulock, 2010; Reyna, 2010). Longitudinal tracking of student cohorts through intermediate milestones makes it possible to identify where along their educational pathways students are likely to drop out and thus where colleges should focus their efforts to improve student retention. It also allows colleges to see if they are improving over time the rate at which students are progressing toward program completion.

An intermediate milestone that has not received enough attention is entering a coherent program of study. Every student who hopes to earn a postsecondary credential must first enter a program by taking and passing multiple college-level courses in a given program area. For the purposes of this analysis, a student is considered to have entered a program of study when he or she takes and passes at least nine college-level semester

credits (usually equivalent to three courses) in at least one program area. In the pages that follow, these students are referred to as "concentrators." Students' course-taking behaviors are used to identify concentrators rather than their declared majors[4] or educational objectives because such measures are not always reliable indicators of actual student behavior and because students' goals can change as a result of their educational experience (see Bailey, Jenkins, & Leinbach, 2006). The three-course threshold is admittedly somewhat arbitrary—we assume that students who take one or two courses in a field may simply be exploring an area of potential interest, while students who take and pass at least three courses in a program area indicate a greater degree of seriousness about pursuing a course of study in that area.[5]

The analyses presented here examine the progress of a cohort of first-time college students who took at least one college-level or developmental course in one of the community colleges in the sample in 2005–06. Cohorts were tracked over five years, with outcome measures including the proportion of students who earned a certificate or associate degree from a public two-year college, transferred to another two-year institution, or transferred to a public or private four-year institution.[6]

Figure 1 shows the highest education outcomes after five years for five groups in the sample: (a) the entire cohort of first-time college students (which includes those who concentrated in a program of study and those who did not); (b) students who concentrated in liberal arts and sciences (by taking and passing at least nine college-level semester credits of liberal arts and science coursework);[7] (c) students who concentrated in a career–technical education (CTE) field; (d) students who attempted at least nine college

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[4] We use the term "major" here as shorthand, although many community colleges use "program of study" or "program code" to refer to the program area or field in which students indicate they are interested in focusing their studies. As mentioned, the programs of study community college students say they intend to pursue and those they actually follow can differ.

[5] There is some descriptive evidence from our data to support this in that students who have completed at least nine college-level credits (usually three courses) in a single program of study are more likely to earn an award and less likely to drop out of the institution over a five-year period than are students who have completed at least six college-level credits in a program.

[6] Student transfer patterns were tracked using data from the National Student Clearinghouse, which collects information on student enrollments in postsecondary institutions nationally. For more information, see http://www.studentclearinghouse.org/.

[7] Students who concentrated in more than one program of study are assigned to the program in which they earned the highest number of college-level credits over five academic years. If a student earned the same number of credits in multiple programs, the student is assigned to the program in which he or she completed the most courses in the shortest length of time.

credits in a program area (which excludes those who just took one or two courses) but did not complete them, and therefore are classified as "failed attempters"; and (e) students who did not attempt at least nine college credits in a program area, whom we refer to as "non-attempters."[8]

Figure 1
Five-Year Highest Educational Outcomes for First-Time Community College Students:
Concentrators, Failed Attempters, and Non-attempters Compared

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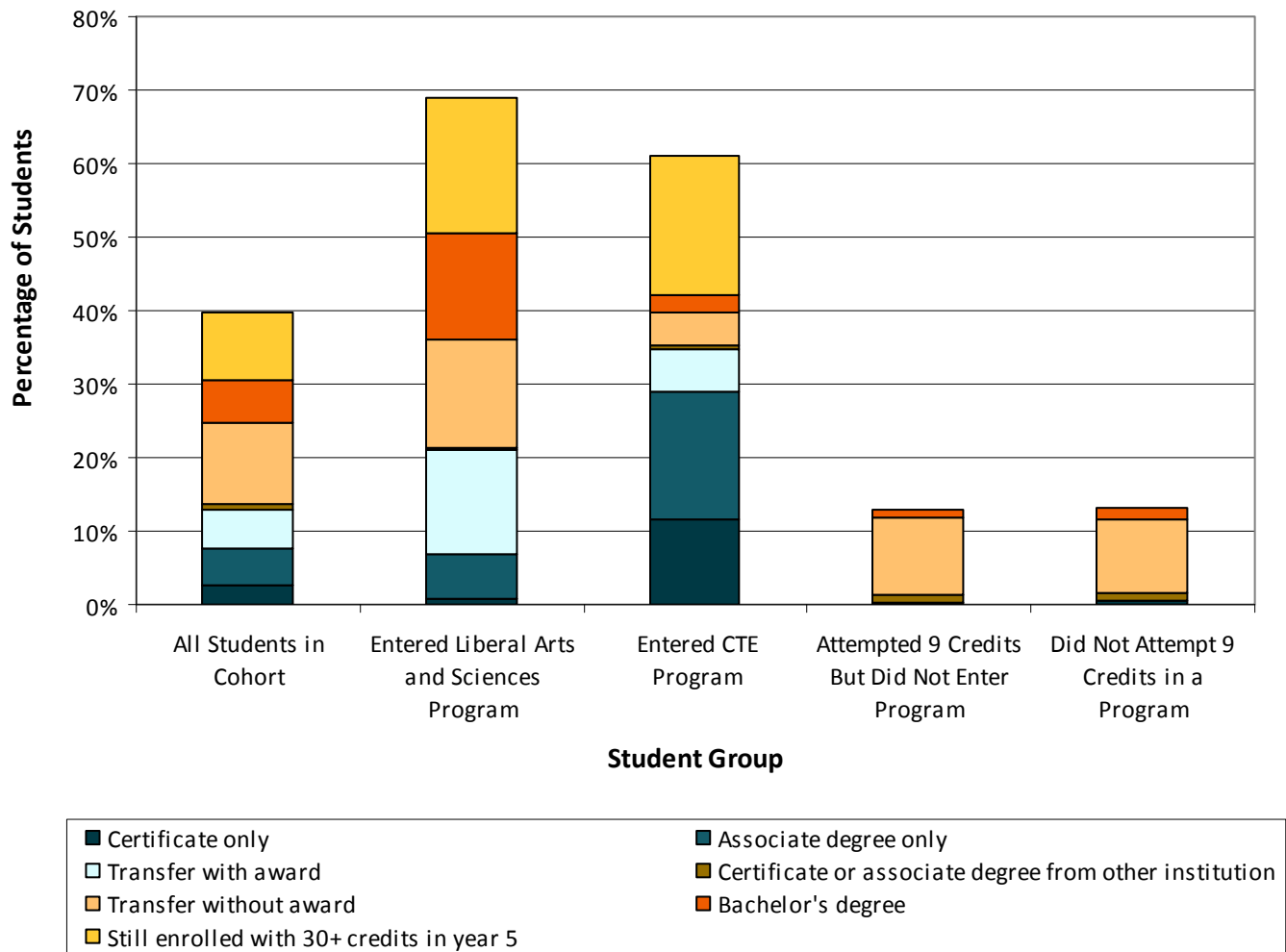
[8] The taxonomy used to classify courses into programs of study is given in the appendix.

About 14% of students in the full cohort earned a certificate or associate degree from a community college within five years. Another 11% transferred to a four-year institution without having first earned a community college credential, while 6% earned a bachelor's degree from an outside institution. About 9% had earned at least 30 college credits and were still enrolled after five years. Among students who successfully entered a program in liberal arts and sciences, about 21% earned a certificate or associate degree, another 15% transferred to a four-year institution without having earned a two-year credential, and about 14% earned a bachelor's degree from another institution. Among career–technical education (CTE) concentrators, over one third earned a certificate or associate degree, but only about 5% transferred to a four-year institution without a two-year credential, and only 2% earned a bachelor's degree from an outside institution.

Students who did not enter a program of study had similar outcomes regardless of whether or not they attempted nine college credits in a single field. As expected, no student who did not enter a program of study earned an associate degree. However, among failed attempters, about 10% transferred to a four-year institution, and about 1% earned a bachelor's degree. Similarly, among non-attempters, about 10% transferred to a four-year institution, and about 1.5% received a bachelor's degree.

It is reasonable to expect that how quickly students enter a program of study would make a difference in their outcomes, and indeed, as Figure 2 shows, most students who entered a concentration did so relatively early. In fact, of students in the cohort who successfully entered a concentration, 85% did so within the first two full academic years of their initial entry.

Figure 3 shows the importance of entering a program of study as soon as possible. Students who entered a program of study in the first year performed substantially better than did those who became concentrators in the second year or later. Over half of the students who first entered a program of study in their first year earned a certificate or associate degree, transferred to a four-year institution (either with or without a credential), or earned a bachelor's degree from an outside institution. The rates of credential completion or transfer for students who first entered a concentration in the second academic year after entry was about 37%—about a third less than students who entered a concentration in the first year. A substantial proportion of students who entered

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a concentration after the start of the second academic year were still enrolled in the fifth year after entry having earned at least 30 college credits, although it is not clear how many of the credits these students earned would count toward a credential. These findings suggest that colleges should intensify their efforts to help entering college students who do not have clear goals for their education or careers select a program of study as quickly as possible.

Figure 2
Percentage of Concentrators Who First Entered a Concentration by Term,
by Area of Concentration

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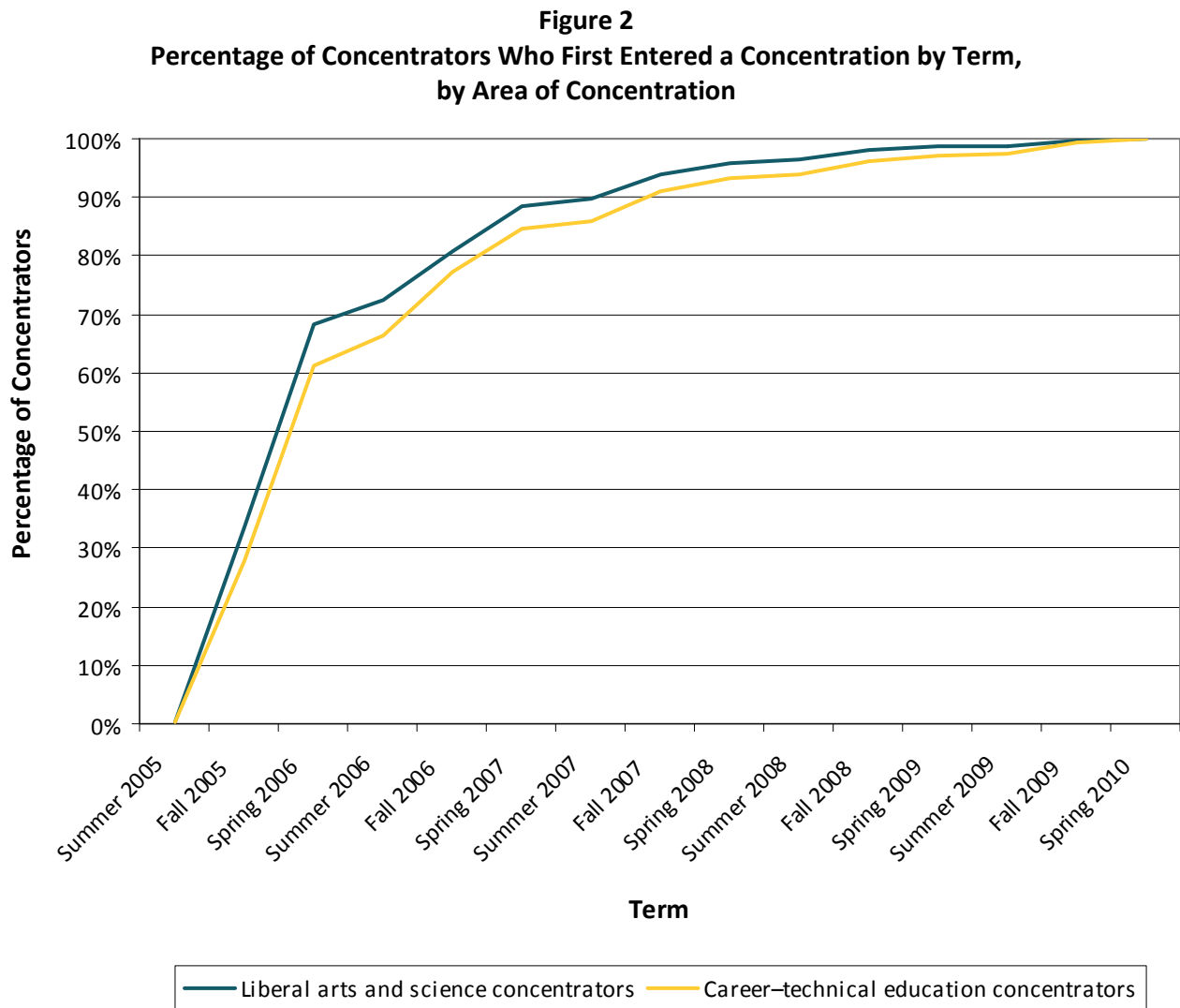
Figure 3
Highest Educational Outcome Achieved Within Five Years
by Year Student First Entered Concentration

Legend:
- ■ Certificate only
- ■ Associate degree only
- □ Transfer with award
- ■ Certificate or associate degree from other institution
- ■ Transfer with no award
- ■ Bachelor's degree
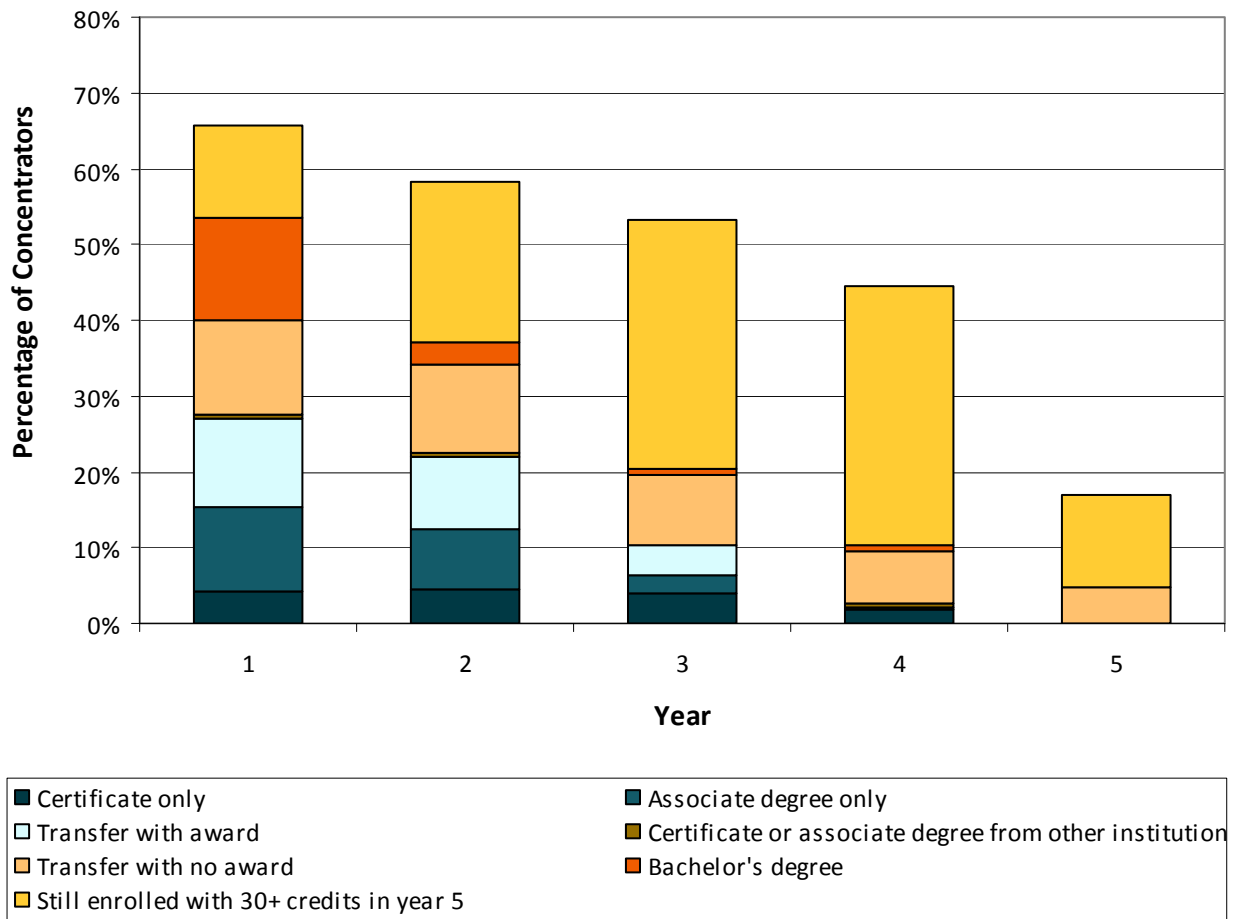- ■ Still enrolled with 30+ credits in year 5

Table 1 compares the demographics and placement test results of the concentrators, failed attempters, and non-attempters in our sample. There are differences across the three groups of students; concentrators are more likely to be female, slightly younger, predominantly white, and either college-ready or referred to just one developmental subject. Thus, it is possible that there are selection effects occurring here—that groups of first-time students are more likely to become concentrators based on their incoming characteristics. However, it is interesting to note that the reading and writing placement test scores of the concentrators and failed attempters are more similar to each other than to those of the non-attempters, suggesting that ability as measured by testing may not play a large role in whether students concentrate or fail to do so.

Table 1
Characteristics of Concentrators, Failed Attempters, and Non-attempters

|	All Students in Cohort	Entered a Program of Study	Attempted 9 Credits, But Did Not Enter Program	Did Not Attempt 9 Credits in a Program
N	20,220	11,328	3,513	5,379
Female	54.39%	55.66%	51.24%	53.78%
Mean age	21.94	21.47	20.33	23.99
White	61.47%	66.11%	58.33%	53.75%
Black	21.79%	16.30%	25.96%	30.62%
Hispanic	6.57%	6.33%	6.63%	7.03%
Asian	6.39%	7.35%	5.12%	5.21%
College-ready	35.96%	37.54%	29.75%	36.70%
Referred to one developmental subject	31.00%	34.19%	34.07%	22.27%
Referred to two developmental subjects	20.07%	18.71%	21.86%	21.75%
Referred to three developmental subjects	12.91%	9.53%	14.18%	19.20%
Mean reading test score	81.87	84.04	82.08	76.71
Mean writing test score	71.17	75.76	71.59	60.27

As is shown in Figure 4, nearly three quarters of students in the cohort tried to enter a concentration by attempting at least nine college credits in a program area. However, only 56% successfully completed at least nine college credits in a program area and thus successfully entered a program of study. This may reflect the difficulty community college students often have passing the initial college-level courses in particular fields. These courses are sometimes called "gatekeepers" because they prevent many students from entering a program of study. Examples include Biology 101 and Anatomy and Physiology for nursing students, Economics 101 and Accounting 101 for business students, and Math 101 and English 101 for students in most programs leading to an associate degree. Thus, in this sample, a substantial proportion of students were evidently seeking to enter a program of study but were not successful in doing so. Community colleges should examine whether this is the case with their own students and, if so, take steps to help students pass the gatekeeper courses.

Figure 4
**Percentage of Students Who Attempted Versus Successfully Entered
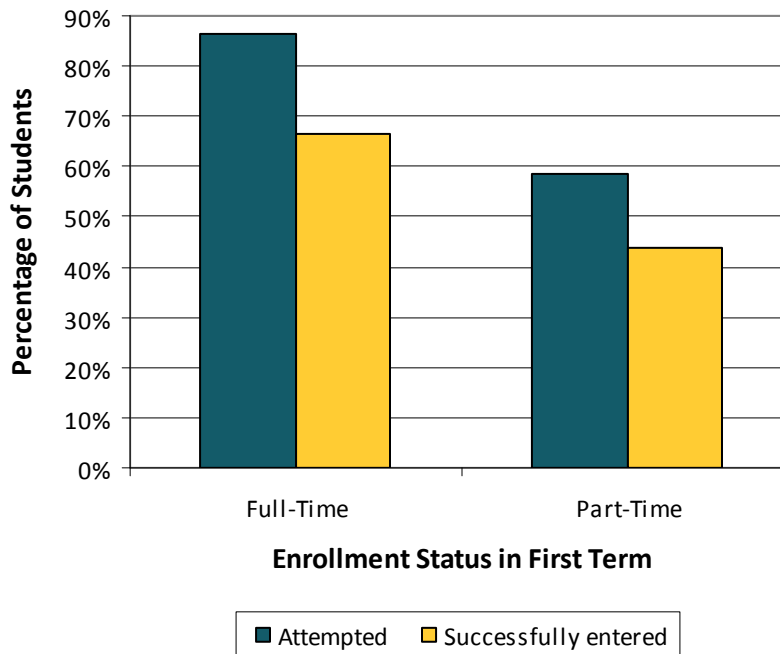a Concentration Within Five Years**
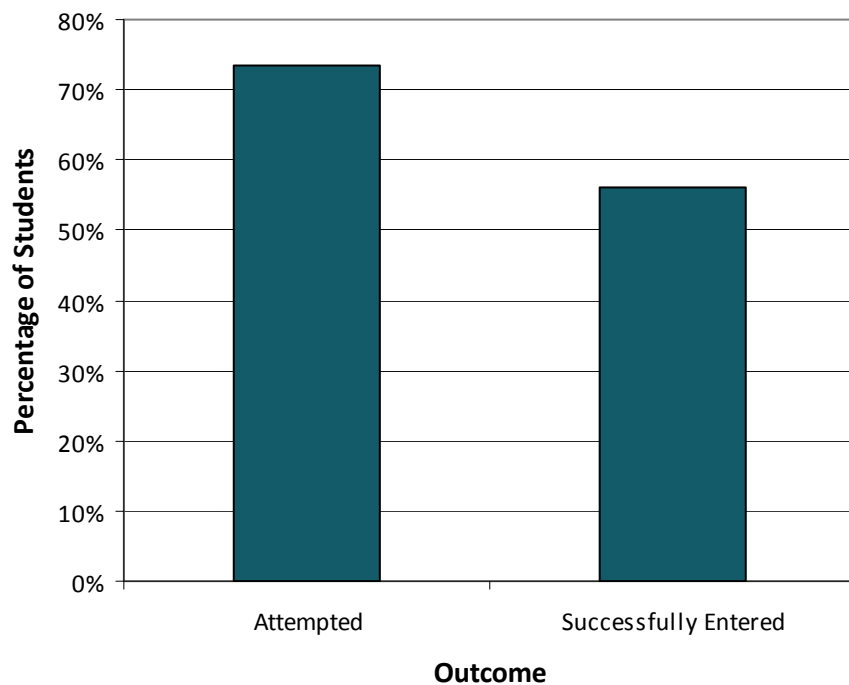
Students in the cohort who first entered college soon after high school attempted to enter a program of study at a higher rate than did students who did not start college until they were older (see Figure 5). However, the gap between those who attempted to enter a concentration and those who succeeded was larger among those recently out of high school than among older students (20 percentage points for students who first enrolled at age 19 or younger versus 10 percentage points for students who first enrolled at age 27 or older). This might reflect the greater clarity of goals and determination often observed among older students (Calcagno, Crosta, Bailey, & Jenkins, 2007). Students who enrolled full-time in their first term were much more likely than part-time students to attempt and successfully enter a program of study within five years (see Figure 6). Interestingly, students who were referred to developmental education were overall about as likely as students assessed to be college-ready to attempt to enter a program of study, although the rate at which students referred to two or more subjects of developmental education succeeded in entering a program of study was lower than that of higher-level developmental students (see Figure 7).

Figure 5
Percentage of Students Who Attempted Versus Successfully Entered a Concentration Within Five Years by Age at First Enrollment
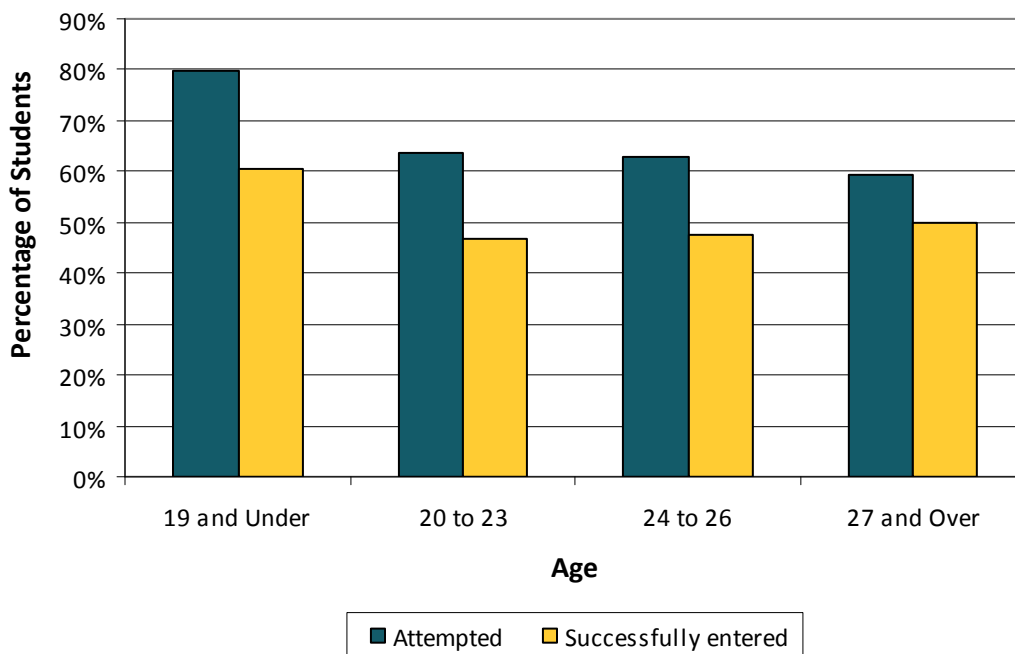
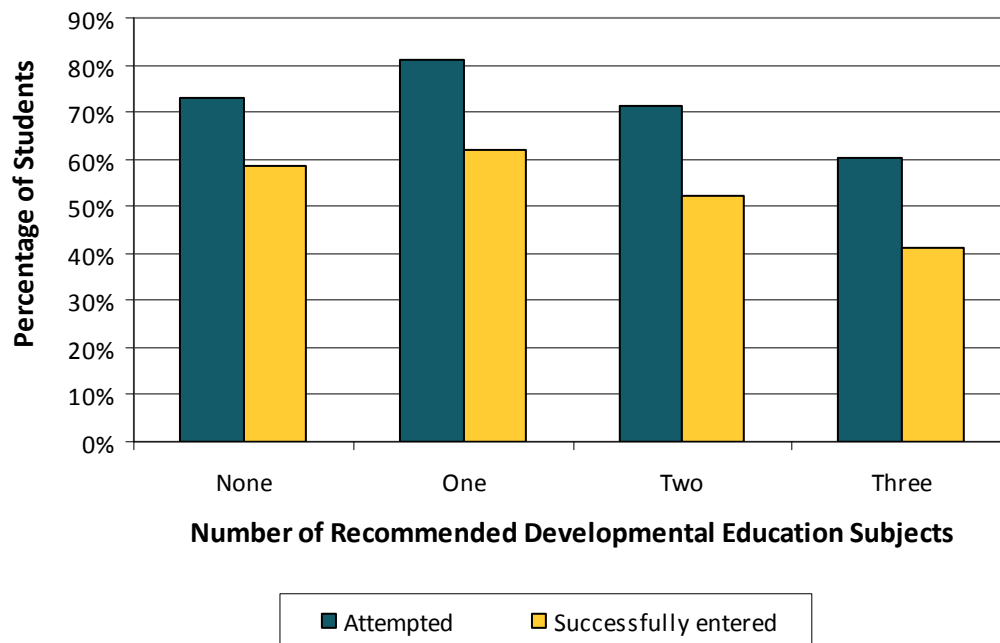**Figure 6**
Percentage of Students Who Attempted Versus Successfully Entered a Concentration Within Five Years by First-Term Enrollment Status

Figure 7
Percentage of Students Who Attempted Versus Successfully Entered a Concentration Within Five Years by Initial Developmental Placement Level

3. Concentrators: Enrollment and Outcomes by Field of Study

About two thirds of students in the sample who succeeded in entering a program of study concentrated in liberal arts and sciences, while the other third concentrated in a career–technical program (see Figure 8).

Figure 8
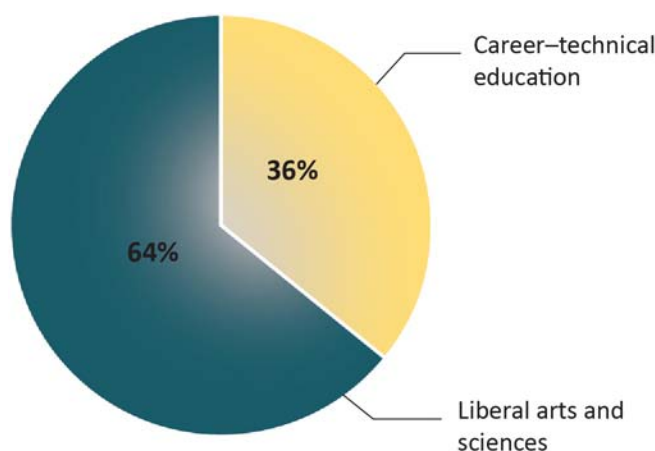**Distribution of Concentrators by Program Type**

Figure 9 shows the percentage of concentrators in each program area. Students were most likely to concentrate in one of the three liberal arts and sciences sub-fields, with arts, humanities, and English having the most concentrators, followed by social and behavioral sciences, and then math and science. Among CTE programs, students were most likely to concentrate in business, followed by allied health, nursing, and protective services. Many community colleges rely on students' declared majors to indicate enrollment in a program. Yet major information is not always reliable and can change, so the method used here to identify students' area of concentration by their course-taking patterns is a better way to understand which program areas students are actually entering. Ideally, colleges should compare data on students' declared majors or programs of study with data on the concentrations they actually enter.[9] Colleges can use this information to

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[9] We acknowledge that our concentrator measure is fairly crude and cannot distinguish when a student who is taking courses in liberal arts may actually be trying to satisfy general education requirements for a particular major outside liberal arts and science, such as engineering or nursing. This is why we recommend comparing data on students' declared majors with the actual courses they take and pass.

assess which students are and are not entering a program of study and whether students are actually pursuing and making progress in the program of study in which they have indicated an interest. This information can also be used by individual departments to examine how effective they are at recruiting students and at helping students who have entered their programs to complete as efficiently as possible.

Figure 9
Distribution of Concentrators by Program Area
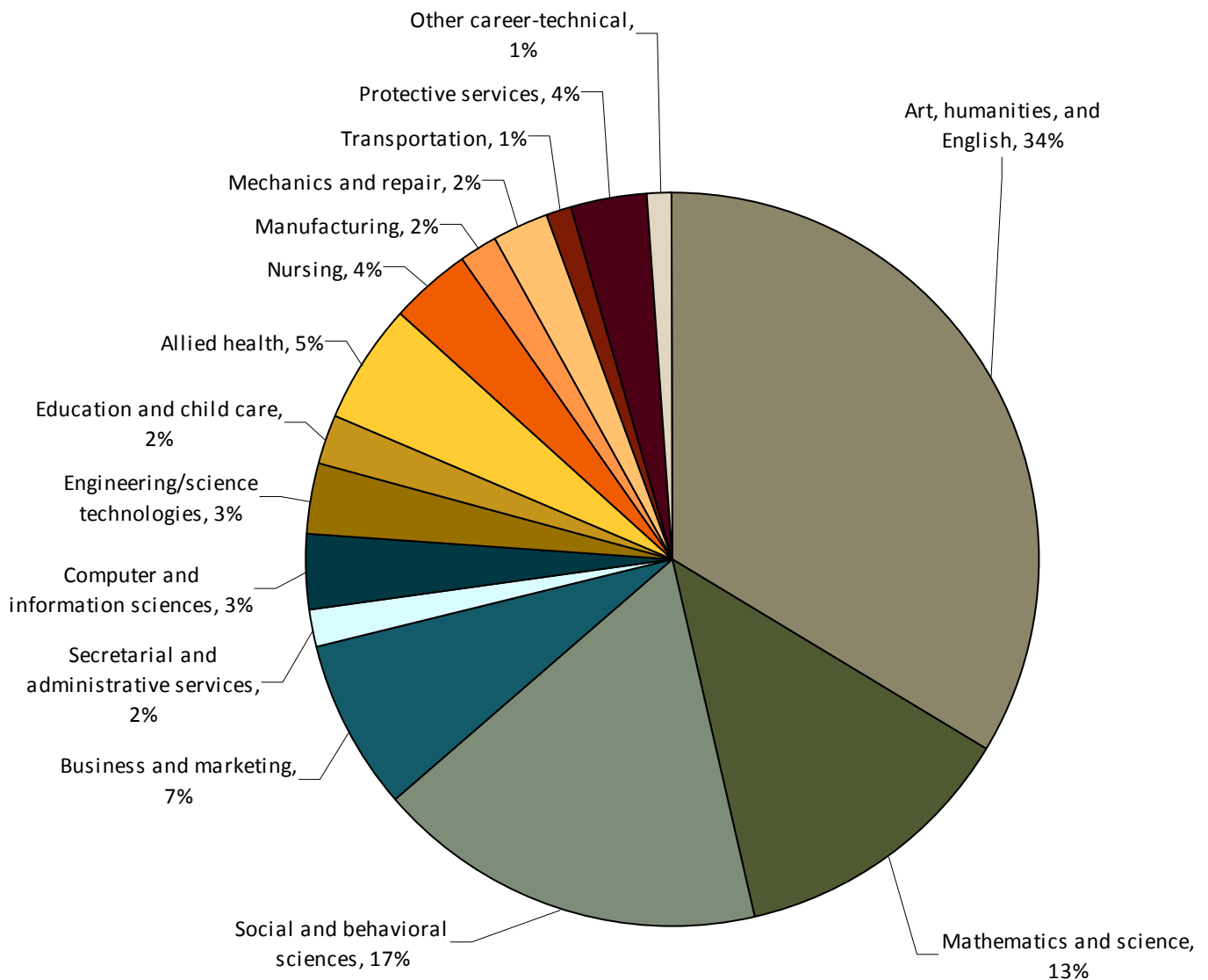
Ideally, colleges will develop their own measures to identify concentrators based on the actual program requirements for credentials in a particular field.

Figure 10 shows the outcomes after five years for liberal arts and sciences concentrators by subfield. Math and science concentrators had the highest success rate, with 26% earning a certificate or associate degree within five years, compared with 21% of arts, humanities, and English concentrators and 18% of social and behavioral sciences concentrators. Math and science concentrators were also more likely to transfer to a four-year institution having already earned an award and more likely to persist and earn a bachelor's degree compared with other liberal arts and sciences concentrators.

Figure 10
Five-Year Highest Educational Outcome of Liberal Arts
and Sciences Concentrators by Program Area
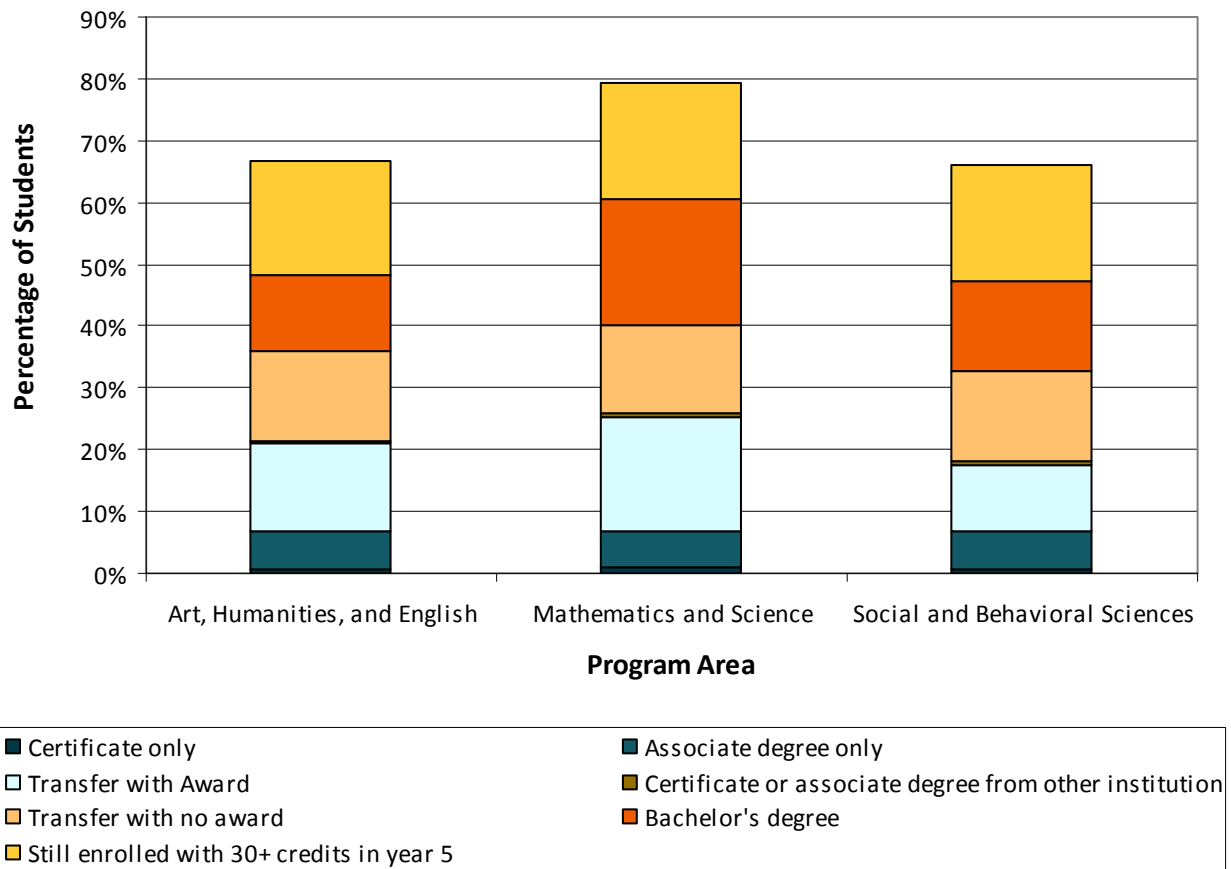
Among CTE concentrators (Figure 11), those in nursing were most likely to earn a certificate or associate degree at their original institution or another two-year institution (57%) within five years. This is not surprising, given that nursing programs are generally selective, in that students are required to complete prerequisites before being accepted. Moreover, nursing programs tend to be highly structured, with licensing requirements dictating course content. Other concentrations with relatively high certificate or associate degree completion rates included secretarial and administrative services (46%), allied health (43%), and transportation (39%). Business and marketing had the highest percentage of bachelor's degree earners within five years, at 5%.

Figure 11
Outcomes of Career–Technical Education Concentrators by Program Area
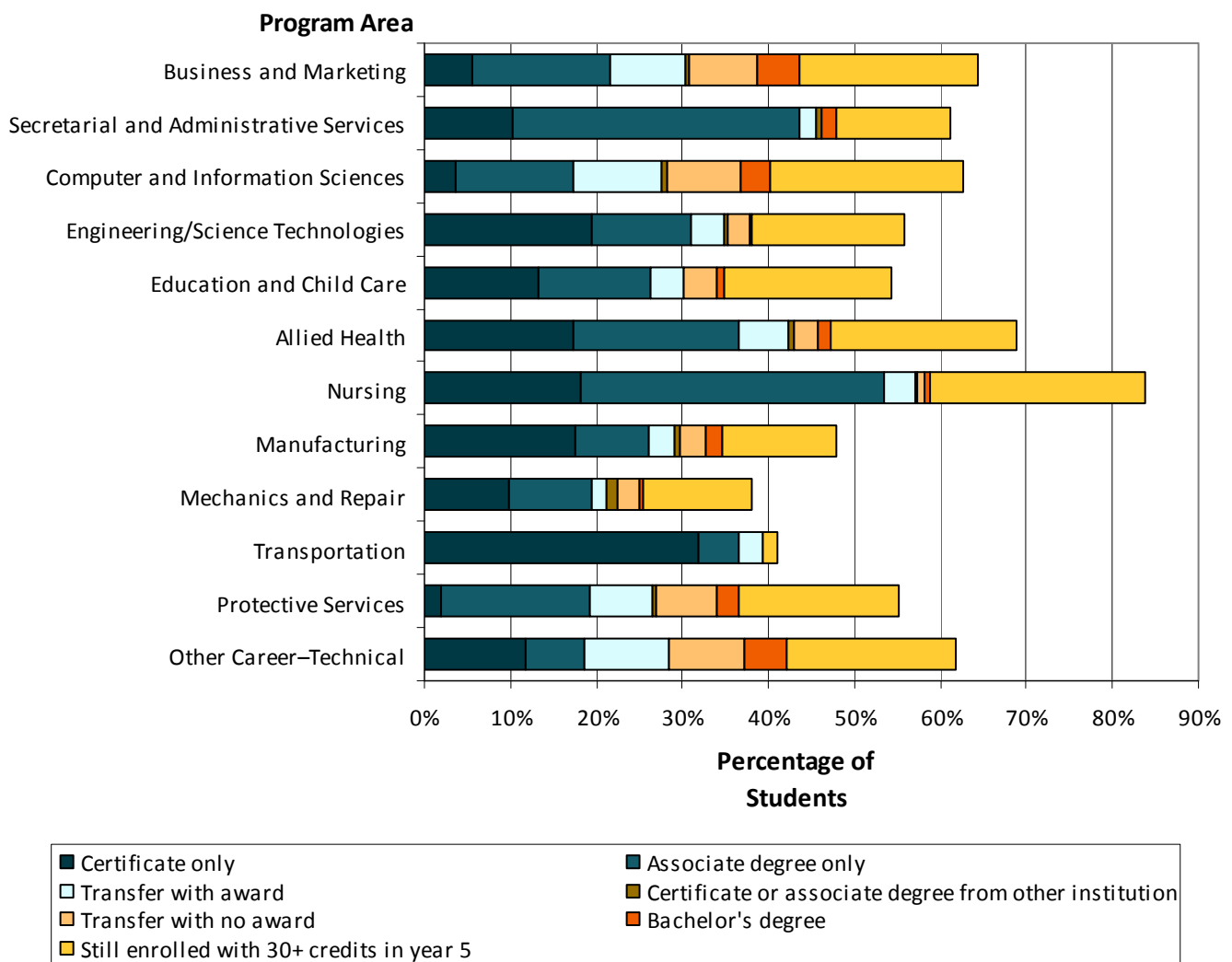
Not only is there variation in completion rates across CTE fields, but the types of outcomes also vary by field. For example, most of the credentials earned by concentrators in business and computer and information sciences were associate degrees as opposed to certificates, whereas the majority of the awards earned by manufacturing and transportation concentrators were occupational certificates. This makes sense, given the variation in labor market requirements for education and credentials across occupations.

4. Measuring Changes in Program and Institutional Performance

It is sometimes useful to benchmark performance across colleges. If data were available across colleges on the measures examined here, we could ask: Why do students referred to developmental education enter college-level programs of study at higher rates in some colleges than in others? Are institutions with higher program entry rates doing anything special to guide and support students as they enter programs of study?

Yet, as is clear from this analysis, different academic programs within a college can differ substantially not only in their completion rates but also in the types of outcomes they produce. Because different colleges offer different mixes of programs, ultimately the best way to measure whether the overall performance of a college is improving is to compare recent student outcomes to the outcomes of previous students (keeping in mind that the characteristics of students served by a college can change over time). Similarly, within colleges, the performance of individual academic programs can best be gauged not by comparing outcomes across programs but rather by examining trends over time in the outcome rates for concentrators in each program area. It is also clear that for a college's overall completion rate to improve, efforts need to be made to increase rates of program entry and completion across all academic programs, particularly those serving larger numbers of students.

5. Rethinking Community College Practice
to Accelerate Program Entry and Completion

To earn a postsecondary credential, students must enter a program of study and, once in a program, complete the required coursework. The analysis presented here shows the importance of entering a program of study as quickly as possible. Students who entered a program of study in the first year were much more likely to complete a credential or transfer to a four-year institution within five years than were students who did not enter a program until the second year or later. Moreover, a substantial number of students who attempted to enter a program of study failed to do so because they did not pass gatekeeper courses. Even among those who did enter a program, many were still enrolled after several terms, which raises the question of whether colleges could do more to help students complete their programs sooner.

Community colleges typically offer a wide array of programs. Yet, many students, particularly those who are younger, arrive without clear goals for college and careers, and colleges typically offer limited guidance to students in choosing a program of study. Many students end up in developmental education, which generally does not provide a clear pathway to a college-level program of study. Requirements for community college programs are sometimes not clearly defined for students, and academic departments often do not keep track of students in their programs. At every stage of the student's experience with a college—connection, entry, progress, and completion—community college practices are often not well designed and aligned with one another to facilitate entry into and completion of a program of study as soon as possible.[10] Thus, for community college students, the experience of college can be confusing and frustrating. It is not surprising that many become discouraged and drop out.

Because the causes of low community college completion rates are systemic, efforts to improve completion rates need to involve all parts of an institution, not just developmental education, advising, and other college functions responsible for student intake and remediation. Moreover, piloting "best practices" and then trying to bring them to scale will not suffice to "move the needle" on overall rates of student completion.

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[10] See Jenkins (2011) and Scott-Clayton (2011) for discussions of how community college practices can hamper students' progress in entering and completing programs of study.

Interventions of this sort are common among community colleges but typically reach too few students and are difficult to scale and sustain.[11]

To improve completion rates on a substantial scale, rather than trying to bring to scale best practices, community colleges should follow a "best process" approach of rethinking their practices in ways that strengthen pathways to program entry and completion (Jenkins, 2011). For this to happen, college faculty, staff, and administrators from across silos should work together to review program structures, policies, and supports at each stage of the student's experience with the college and redesign or better align college practices in ways that strengthen program pathways for students and thus accelerate their entry into and completion of programs of study leading to credentials of value.

5.1 Guiding Questions

Figure 12 shows the broad questions that should guide faculty, staff, and administrators in this process of strengthening pathways to completion for students. The following are examples of more specific questions that college personnel should be asking at each stage of students' experience.

- *Connection* – Questions a college's recruitment staff, in partnership with advising and academic departments, should be asking:

    - How can we improve understanding among high school students about the credential program opportunities offered by the college?

    - How can we motivate and guide students to prepare to enter a college-level program of study as soon as they graduate high school?

    - Can we more effectively recruit students from adult basic skills, non-credit vocational, and community-based education programs into college-level programs of study?

- *Entry* – Questions colleges' advising staff, in partnership with developmental education and academic departments, should be asking:

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[11] A recent evaluation of the experience over five years of the first round of colleges to join Achieving the Dream found that a main reason the colleges on average had not achieved improvements in the initiative's aggregate measures of performance was that many if not most of the interventions implemented by the colleges were still small in scale (Rutschow et al., 2011).

- What guidance and support can we provide to help students develop clear goals for college and careers and choose a program of study as soon as possible?

- What approaches to remedial instruction are most effective for preparing academically underprepared students to enter and succeed in a program of study?

- How can we help students who are attempting to enter a program of study pass the gatekeeper courses that often prevent students from getting on a program path?

- *Progress* – Questions academic departments, in consultation with student services staff, should be asking:

  - Are we effectively tracking and advising program concentrators to ensure that they are making progress toward completion?

  - Are our programs well structured so that students can complete them as quickly as possible?

  - Are required courses offered when students need to take them?

- *Completion* – Questions academic departments and top administrators should be asking:

  - Are our academic program options and requirements clearly defined for students entering the college and for program majors?

  - How are we assessing whether students are mastering the skills and knowledge that our programs seek to teach them?

  - What can we learn from baccalaureate program faculty, employers, and program alumni to ensure that our programs prepare students to succeed in further education and (with career–technical programs) advance in the labor market?

Figure 12
Guiding Questions for College Efforts to Strengthen Student Pathways to Completion

CONNECTION From interest to enrollment	**ENTRY** From enrollment to program entry	**PROGRESS** From program entry to completion of program requirements	**COMPLETION** From completion of credential of value to further education and labor market advancement
How can we motivate and prepare entering students to choose a college-level program of study?	How can we accelerate the rate at which new students choose and successfully enter a program?	How can we accelerate the rate at which program concentrators complete program requirements?	How can we ensure that our programs prepare students for further education and (for CTE programs) for career advancement?

5.2 Research-Based Principles of Effective Practice

In rethinking their practices, colleges should keep in mind principles of practice that are supported by research on student success and instructional effectiveness in community colleges and education more generally. Instructional program coherence, mentioned earlier, is one such principle. Student engagement is another principle of effective practice supported by research on college student success (Tinto, 1993). Other principles examined in the Community College Research Center's Assessment of Evidence Series[12] include:

- *Structured programs* – Research in behavioral economics and other fields suggests that students perform better when offered a limited set of clearly defined program options that have well-structured or prescribed paths to completion (see Scott-Clayton, 2011).

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[12] In this series, CCRC researchers examine the evidence from the research literature on promising approaches to achieving substantial improvements in community college student success and institutional effectiveness. An overview of the findings and the individual papers in the series are available on the CCRC website: http://ccrc.tc.columbia.edu/Publication.asp?UID=845.

- *Contextualized instruction* – Evidence is promising for approaches to teaching basic skills in the context of instruction in content area subject matter (see Perin, 2011).

- *Acceleration* – Evidence suggests colleges may be able to increase the rate at which students needing remediation advance to college-level study through various approaches, including restructuring of courses using instructional technology and "mainstreaming" higher-level remedial students into college-level courses with added support (see Edgecombe, 2011).

- *Integrated student supports* – Community college students are more likely to benefit from student support services that are integrated into the educational experience and that help students (a) create social relationships, (b) clarify aspirations and enhance commitment, (c) develop college know-how, and (d) address conflicting demands of work, family, and college (see Karp, 2011).

5.3 Sample Practices for Accelerating Rates of Program Entry and Completion

The following are examples of ideas that might emerge from efforts by colleges to rethink their practices at each stage of students' experience to accelerate rates of program entry and completion. These ideas reflect the research-based principles of effective practice outlined above.

- *Connection* – Ideas for increasing the number of new students entering the college motivated and prepared to enter a college-level program of study:
  - Create marketing materials for use with prospective students showing the major program streams offered by the college, where each stream is designed to lead in terms of further education and (for CTE programs) career advancement, and what students who want to enter a given stream need to do to succeed in it.
  - Partner with feeder high schools to provide orientation to college program options and requirements as well as early assessment of college readiness, beginning in the sophomore year.
  - Reorient dual or concurrent high school–college enrollment programs to encourage high school students to enter college-level programs, not just take college-level courses, while they are still in high school.

- o Build "bridge" programs that enable adult basic skills students to advance to college-level programs, especially in career–technical fields.

- *Entry* – Ideas for increasing the rate and pace at which students enter a program of study:

  - o Require all degree-seeking, first-time college students to develop a program completion plan.

  - o Require all first-time college students to take a three-credit college success course (ideally in their first term) that (a) exposes students to college program options and requirements, (b) helps them develop a program completion plan tied to goals for further education and employment, and (c) provides instruction in "college success skills," such as note taking, test taking, and time management.

  - o Customize remedial offerings for each major program stream (e.g., liberal arts, STEM, business, allied health, engineering technologies, etc.) with contextualized instruction to ensure that students are mastering the basic skills and knowledge that are essential for success in the given stream.

  - o Require students who need remediation to take a prescribed set of courses that includes a college success course, customized remedial instruction, and an introductory college-level survey course in a program area of interest.

- *Progress* – Ideas for accelerating rates of program completion:

  - o Strongly recommend that all students declare a program of study within the first year and require them to keep up-to-date a program completion plan.

  - o Improve instruction and integrate supports into coursework to help students pass gatekeeper courses in each program area.

  - o Assign concentrators to program faculty advisors who will regularly meet with them to ensure that they are progressing according to their program plans.

  - o Ensure that the courses required to complete each program are offered regularly and on a schedule convenient to students.

- *Completion* – Ideas for ensuring that programs of study are coherent and prepare for success in further education and (for CTE) employment:

- Consolidate program offerings into a small number of program streams (such as liberal arts/transfer, business, allied health and nursing, engineering technology, education, consumer services, etc.), each with a limited set of clearly specified programs leading to credentials.

- Clearly map out for each program a prescribed sequence of courses, limiting the number of elective courses.

- Regularly communicate with faculty and administrators in partner baccalaureate programs to ensure that program curricula are aligned with transfer requirements.

- Regularly communicate with employers to ensure that CTE programs are meeting labor market requirements.

- Survey recent graduates for their suggestions for how the programs they completed could be improved.

These are just examples of actions colleges might take to improve program entry and completion. While colleges may conduct smaller-scale pilots to test particular approaches, whatever innovations colleges choose to implement must be designed from the start to be implemented at scale and in a way that can be sustained without substantial additional resources. Moreover, no one innovation or even set of innovations in practice will suffice to improve overall completion rates; rather, colleges need to review everything they do and ensure that their practices at each stage of students' experience are well aligned to accelerate the rates at which students enter and complete programs of study.

5.4 Sustaining Organizational Innovation

Implementing large-scale, systemic changes such as these is challenging in any environment, but it is especially challenging in times of scarcity and uncertainty like the present. Research on organizational effectiveness and improvement in higher education and other sectors highlights the importance of the following management practices for supporting and sustaining organizational innovation.[13]

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[13] See Jenkins (2011) for an exploration of these and other practices of high-performing organizations and their implications for community college reform.

- *Strong, outcomes-oriented leadership.* College leaders, including not only top administrators but also faculty leaders, deans, and department chairs, need to agree on and communicate a clear and compelling vision for improving student outcomes and set ambitious goals that faculty and staff will want to work to achieve.

- *Broad-based engagement and supporting professional development.* Obviously, substantial change in community college practice will not happen without the active support and involvement of faculty and student services staff. Therefore, college leaders need to empower faculty and staff from across divisions to address the questions outlined above; identify priority areas for improvement; and implement, evaluate, and further improve changes to practice. Leaders also need to provide resources for professional development that strategically supports the efforts by faculty and staff in the redesign work. This reframes professional development as an activity that supports the collective involvement of faculty and staff in the redesign process rather than an activity that mainly supports professional growth of faculty and staff as individuals.

- *Evidence-based improvement.* To the extent possible, decisions on how to improve practice should be supported by evidence. Colleges should assess the effectiveness of earlier efforts to improve student success. Moreover, any new innovations should be evaluated to ensure they are helping to improve student outcomes.

- *Attention to cost-effectiveness and productivity.* Colleges should evaluate not just the effectiveness of innovations but also their costs. In general, the goal should be to increase organizational productivity—that is, to increase rates of student success and improve student learning outcomes without requiring net additional staff and monetary resources.

So that colleges continue to improve student outcomes, the redesign process must be ongoing. To build an infrastructure for continuous improvement, colleges should rethink their committee structures; program review processes; professional development policies; budgeting practices; and strategies for employee hiring, performance review, and incentives—all with a view to ensuring that the process of reviewing and redesigning college practice to accelerate the rates at which students "get with a program" and complete it becomes an integral part of the way community colleges do business.

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Appendix: Program of Study Taxonomy

This paper uses the following taxonomy to classify courses by program or field of study. It is adapted from an unpublished October 2009 NCES taxonomy of postsecondary programs. In tracking students' progress, colleges and states should of course use a taxonomy adapted to their own particular offerings.

Field of Study	Associated 2000 CIP Code Series
Academic (transfer) education	
Arts, humanities, and English	9 – Communication, journalism, and related programs [non-technical] 16 – Foreign languages, literatures, and linguistics 23 – English language and literature/letters 24 – Liberal arts and sciences; general studies and humanities 30.1301 – Medieval and renaissance studies 30.2101 – Holocaust and related studies 30.2201 – Ancient studies/civilizations 30.2202 – Classical, Mediterranean, Near Eastern studies 30.2301 – Intercultural and diversity studies 30.9999 – Multi/interdisciplinary studies, unspecified 38 – Philosophy and religious studies 50 – Visual and performing arts
Mathematics and science (STEM)	26 – Biological and biomedical sciences 27 – Mathematics and statistics 40 – Physical sciences 30.0101 – Biological and physical sciences 30.0601 – Systems science and theory 30.1001 – Biopsychology 30.1801 – Natural sciences 30.1901 – Nutrition sciences 30.2401 – Neuroscience 30.2501 – Cognitive science
Social and behavioral sciences	5 – Area, ethnic, cultural, and gender studies 22 except 22.03 and 22.0103 – Legal studies 30.0501 – Peace studies/conflict resolution 30.1101 – Gerontology 30.1501 – Science, technology, and society 30.1701 – Behavioral sciences 30.2001 – International and global studies 30.12 – Historic preservation and conservation 30.1401 – Museology/museum studies 42 – Psychology 45 – Social sciences 54 – History

Career–technical education

Agriculture and natural resources	1 – Agriculture 3 – Natural resources and conservation
Automotive and aeronautical technology	15.08 – Automotive and aeronautical technology
Business and marketing	52 series other than 52.04, 52.14, 52.15, 52.18, 52.19 – Business 19.0505 – Foodservice systems administration/management 19.0604 – Facilities planning and management 52.14 – Marketing 52.15 – Real estate 52.18 – General sales, merchandising, and related marketing operations 52.19 – Specialized sales, merchandising, and marketing operations 8 – Marketing and distribution (1990 classification)
Secretarial and administrative services	22.0103 – Paralegal/legal assistant (1990 classification) 22.0301 – Legal administrative assistant/secretary 22.0302 – Legal assistant/paralegal 52.04 – Business operations support and assistant services
Communications and design	10 – Communications technologies 19.0202 – Human sciences communication 19.0906 – Fashion and fabric consultant 50.04 – Design and applied arts
Computer and information sciences	11 – Computer and information sciences and support services 25 – Library sciences 30.0801 – Mathematics and computer science 30.1601 – Accounting and computer science
Cosmetology	12.04 – Cosmetology
Culinary services	12.05 – Culinary studies
Engineering and architecture	4 – Architecture and related services 14 – Engineering 19.06 except 19.0604 – Housing and human environments
Engineering/science technologies	15 except 15.08 – Engineering technologies 41 – Science technologies/technicians
Education and child care	13 – Education 19.0706 – Child development 19.0709 – Child care provider/assistant 20.0102 – Child development, care & guidance (1990 classification) 20.0107 – Family living & parenthood (1990 classification) 20.02 – Child care & guidance workers & managers (1990 classification)

Allied health	51 except 51.16 – Health professions and related clinical sciences
	19.05 except 19.0505– Dietetics/human nutritional services (1990 classification)
Nursing	51.16 – Nursing
Construction	46 – Construction trades
Manufacturing	19.09 except 19.0906 – Apparel and textiles
	48 – Precision production
Mechanics and repair	47 – Mechanics and repair technologies/technicians
Transportation	49 – Transportation and materials moving
Protective services	29 – Military technologies
	43 – Security and protective services
Other career–technical	12 series other than 12.04 or 12.05 series – Personal and culinary services
	19 series other than 19.0706, 19.0709, 19.05, 19.09, 19.06 – Family and consumer sciences
	20 series other than 20.0102, 20.0107, 20.02 – Family and consumer sciences (1990 classification)
	44 – Public administration and social services professions