

Chicago Fed Letter

Measuring community college performance

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In this article, the authors propose a framework for analyzing the outcomes from community college programs as a starting point for a larger discussion on the optimal distribution of resources across the multiple missions of community colleges.

Community colleges enroll almost half of all undergraduate students in the United States. The colleges were originally chartered as “junior colleges,” offering the first two years of a four-year college degree at considerably lower

cost than other institutions. However, the overall mission of community colleges has expanded significantly. Today, in addition to the original charter, community colleges provide workforce training, contract training for industry, academic remediation to prepare students for college-level study, “developmental” education for

those lacking high school credentials and English proficiency, and enrichment courses for adults. In many ways community colleges act as multiproduct firms, where different programs or products compete for available resources and where success might be defined and measured differently for each one. Given their multiple educational roles, how should we analyze outcomes from community college programs? In this *Chicago Fed Letter*, we offer a framework to answer this vital question, with the hope that it will spark a wider discussion

on how to optimally distribute resources across the many functions of community colleges.

What is special about community colleges?

Community colleges are designed to meet the needs of their local constituents. In addition to costing less than other higher education options, community colleges frequently offer flexible schedules, part-time programs, and other services that are important to students who are working and/or have families (see figure 1 for a profile of U.S. community colleges).

While four-year liberal arts colleges and research universities serve three primary functions—teaching, research, and service—community colleges focus primarily on teaching.

However, as part of their teaching function, many community colleges provide an array of additional services, as we mentioned previously. For many community college students, improving their economic status, rather than receiving a degree, is their chief motivation for enrollment. In response, community colleges offer certificate programs that certify the workplace skills of graduates without a degree.

Research suggests that community colleges can provide measurable benefits to students whether they receive a

1. Profile of U.S. community colleges

Number of community colleges	1,202
Enrollment	11.6 million (6.6 million credit/5 million noncredit)
Average student age	29 years old
Enrollment as a share of all U.S. undergraduates	46%
Average annual tuition and fees (public)	\$2,272 (vs. \$5,836 for 4-year public college)
Annual associate's degrees granted	550,000
Annual certificates granted	270,000

SOURCE: American Association of Community Colleges, www.aacc.nche.edu/Content/NavigationMenu/AboutCommunityColleges/Fast_Facts1/Fast_Facts.htm.

degree or certificate or they simply complete coursework that bolsters their work force skills. Kane and Rouse find that for each year of community college credit received, an individual's annual earnings increased 5% to 8% over that of a high school graduate.¹ For those who went on to receive an associate's degree, the gain was 15% to 27%. Gill and Leigh find that college graduates who started at a two-year college and transferred to a four-year institution earned ultimately about the same as those who started at a four-year college.² This suggests that community colleges may be highly effective for those students who successfully complete the transfer program. The authors also document impressive gains for students who completed work force training programs: Graduates of terminal training programs³ had earnings gains of 38% above those with only high school diplomas, with Hispanic and black graduates having even larger gains than non-Hispanic whites.

Jacobson, LaLonde, and Sullivan look at the value of attending community college in raising the earnings of displaced workers.⁴ For a sample of Washington state students, the authors find that one academic year of community

sales/service courses, social sciences, and basic skills, had post-displacement earnings gains of only 3% to 5%.

While many of these studies report impressive earnings gains, the most significant apply to those who complete programs, which represent only 25% of students overall.⁵ Several researchers suggest that those who complete either a degree or certificate are not representative of the broader population of community college students; that is, students who earn degrees or certificates are often more motivated and have higher skill levels than the general community college population. We are left to conclude that either community colleges are successful for less than one-quarter of the student population or else measures of success are needed for students who do not complete a degree or certificate.

Why evaluate community college outcomes?

Increased accountability for educational outcomes has become a focus of policy ranging from K–12 to higher education. The data reporting requirements created by the No Child Left Behind Act of 2001 (NCLB)⁶ have forced states to develop databases to measure student progress

A study by the Lumina Foundation finds that higher education tracking systems at the state level are far less than comprehensive.⁸ In areas central to the work of community colleges—job placement/work force development and remedial education—metrics are particularly hard to come by. The Lumina report documents that, while 17 states issued regular reports on student employment and/or earnings, most only considered employment in the field in which the student trained. Only seven states tracked remedial students into college-level work and reported the students' results thereafter. Only about 12 states report on the academic performance of community college graduates who go on to four-year colleges. It is difficult to evaluate performance given these data shortcomings.

Evaluating the multiple missions of community colleges

Can the multiple missions of community colleges successfully coexist in a single institution, and if so, how do we evaluate success? Bailey and Averianova posed these question nearly a decade ago and identified a number of trends that make them difficult to answer.⁹

First, in many cases, community colleges do not have the luxury of choosing a particular mission. For example, the combined problems of failing K–12 systems and the reluctance of four-year colleges and universities to offer remediation have left community colleges with an ever-expanding responsibility for remedial education. For example, according to the City Colleges of Chicago (a system of seven community colleges), barely 10% of their incoming students are prepared for college-level math, and just 40% read at the college level.

Despite these statistics, for many community colleges, preparing students to transfer to a four-year institution remains their most important function. The ability to offer two years of financially accessible college credit is, after all, the “democratizing” role of the community colleges. As a result, a tension often exists between the need for increasing remediation and the desire to focus on the transfer to a four-year institution.

In many ways community colleges act as multiproduct firms, where different programs or products compete for available resources and where success might be defined and measured differently for each one.

college schooling increased the long-term earnings of older displaced male workers by 7% and older female workers by 10%. The authors also find that gains in earnings were related to the types of courses taken by the students. For older workers completing one academic year of quantitative or technical courses, including health-related courses, professional courses, technical trades, and college-level math and science, their post-displacement earnings gains were 10%, with those for women even higher. Conversely, students taking less quantitative or technical courses, such as

from grade to grade. A national student unit record system that allows longitudinal tracking of individual students from K–12 to postsecondary education would be a natural extension. Indeed, in 2006, the creation of such a system was one of the primary recommendations of the Secretary of Education's Commission on the Future of Higher Education.⁷ In the absence of data at the student record level, it is difficult to evaluate whether specific changes in curriculum or policy improve student outcomes.

In the case of work force development, a similar tension can develop. Community colleges often create programs whose goals are both to provide training and to raise funds. Yet, despite the desire to respond to local work force needs, which largely drive these programs, state-level funding is still tied primarily to credit-bearing programs rather than to work force initiatives. Thus, work force programs that offer few credits often run at a deficit, creating a financial strain across the institution.

degree-oriented programs might contain elements of work force training. The result, if executed successfully, should be a seamless progression for those students wanting to shift from one program area to the next, with multiple opportunities for moving in and out of the work force as they progress academically.

Measuring performance

There is startlingly little systemwide data to evaluate the results of community colleges in performing their various

While surveys suggest that most students enter community college intending to receive a degree, the clear interest of students is to better their economic standing.

We propose that a solution to both of these sources of tension, as well as a key to developing appropriate outcome measures for community colleges, is to recognize that the vast majority of students attend community college with the goal of bettering their economic conditions—immediately or after attaining a four-year degree. Thus, measures of success should be focused on economic achievement, through earnings gains, or on academic achievement, through baccalaureate transfers. Currently, graduation rates tend to be the only systematic metric available; however, graduation rates fail as an appropriate metric for evaluating the multiple missions of community colleges if we accept that the chief goal of most students is economic advancement rather than graduation per se.

Current research suggests that the most successful programs for students requiring remediation integrate both academic, technical, and, in some cases, social curricula.¹⁰ In other words, community colleges can successfully embrace their multiple missions if curricula are designed to create an integrated academic experience, rather than one that treats each mission as a separate track. Ideally, this means that work force training, remediation, and developmental education programs should contain elements of the academic/degree-oriented and technical coursework, while academic/

missions. Some individual systems (e.g., California) have taken the lead on accountability measures, but even in these cases the results tend to focus on “completers” (degree and certificate recipients) rather than all who attend. To fully evaluate the performance of community colleges, it is necessary to track the benefits that accrue to both completers and “noncompleters.” For metrics to be meaningful they must reflect not only success for students who wish to make a baccalaureate transfer but also success for students who terminate their studies in community college at a certain level (with or without a certificate or degree). Given this, we suggest shared metrics for remediation, developmental education, and work force training that will then also serve us in evaluating the baccalaureate transfer program. The goal is to measure success at both the individual level and the institutional level.

Mission 1—Remediation, developmental education, and work force training/certificate programs

- Do students complete the sequence (remediation, developmental education, or work force training) and eventually earn a certificate or degree?
- Do students get a job or matriculate to a four-year institution when they complete a course or earn a degree or certificate?

- For those moving to jobs, are they still employed after three years? Ten years?
- What are their earnings gains over time, for each level of remediation completed or certificate gained?
- How do their earnings over time compare with the earnings of those who have not completed remediation or earned certificates?

Mission 1A—Contract training

- Are firms satisfied with the training provided for their employees?
- Is the training better and more cost effective for firms than if they were to provide the training themselves or contract with a private (non-community-college) vendor?
- Do recipients of the training see earnings gains relative to those not receiving the training?

Mission 2—Baccalaureate transfer

- Among those who enter the baccalaureate transfer track, what percentage successfully transfer?
- Do those who successfully transfer receive full credit for the courses they took at the community college? Do they enter as juniors at the four-year college?

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Chicago Fed Letter is published monthly by the Research Department of the Federal Reserve Bank of Chicago. The views expressed are the authors' and are not necessarily those of the Federal Reserve Bank of Chicago or the Federal Reserve System.

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ISSN 0895-0164

- Do they receive a bachelor's degree?
- How do their earnings compare with those who began in a four-year college?
- How do their earnings change over time?

Institutional metrics

- What is the cost per student of each course offered?
- How does that cost relate to an appropriate selected outcome measure, such as earnings gains?
- What do student pathways look like in the institution? Does a student move from remediation into a degree or certificate program or at least into a college-level credit course?

This list is not exhaustive. We place a particular emphasis on understanding the earnings gains eventually achieved by each mission undertaken by the community colleges. While surveys suggest that most students enter community college intending to receive a degree, the clear interest of students is to better their economic standing. If this can be accomplished without receiving a degree (or certificate), the student will consider his or her time at the community college well spent, and society at large can consider its investment worthwhile. In addition, using earnings as a primary metric makes it easier to assess the relative costs and benefits of an education provided by

a community college, from both an individual and a societal standpoint.

Conclusion

Community colleges provide great opportunities for increasing both the access to learning across a broad range of subject areas and the economic success of students. We argue that developing better measures of community college outcomes, which in turn would facilitate more efficient resource allocation, requires a broader understanding of how these institutions provide a means for students to better their economic conditions—either by matriculating to four-year institutions or by joining the work force directly.

¹ Thomas J. Kane and Cecilia Elena Rouse, 1999, "The community college: Educating students at the margin between college and work," *Journal of Economic Perspectives*, Vol. 13, No. 1, Winter, pp. 63–84.

² Andrew M. Gill and Duane E. Leigh, 2003, "Do the returns to community colleges differ between academic and vocational programs?," *Journal of Human Resources*, Vol. 38, No. 1, Winter, pp. 134–155.

³ Terminal training programs are self-contained programs that may or may not lead to a certificate or degree.

⁴ Louis Jacobson, Robert J. LaLonde, and Daniel Sullivan, 2005, "The impact of community college retraining on older displaced workers: Should we teach old dogs new tricks?," *Industrial and Labor Relations Review*, Vol. 58, No. 3, article 5.

⁵ While 25% is the nationally reported graduation rate, many argue that this figure does not take into account students who transfer out of state and complete a degree or take longer than four years to complete an associate's degree. See Thomas R. Bailey, Peter M. Crosta, and Davis Jenkins, 2006, "What can student right-to-know graduation rates tell us about community college performance?," Columbia University, Teachers College, Institute on Education and the Economy, Community College Research Center, working paper, No. 6, August.

⁶ NCLB is federal legislation that aims to improve the performance of U.S. primary and secondary schools by increasing the standards of accountability for states, school districts, and schools; it also provides parents more flexibility in choosing which schools their children attend. For further

details on NCLB, see www.ed.gov/nclb/overview/intro/4pillars.html.

⁷ Secretary of Education's Commission on the Future of Higher Education, 2006, *A Test of Leadership: Charting the Future of U.S. Higher Education*, Washington, DC: U.S. Department of Higher Education.

⁸ Peter Ewell and Marianne Boeke, 2007, "Critical connections: Linking state's unit record systems to track student progress," Lumina Foundation, report, January.

⁹ Thomas R. Bailey and Irina E. Averianova, 1998, "Multiple missions of community colleges: Conflicting or complementary?," Columbia University, Teachers College, Institute on Education and the Economy, Community College Research Center, report, October.

¹⁰Ibid.