

***It's Not a Math Problem:
Why Focusing on Transfer Rates Diverts
Us from Promoting Baccalaureate
Completion for Community
College Students***

**Working Paper 4—Destinations of Choice
Initiative: A Reexamination of America's
Community Colleges**

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Destinations of Choice Initiative

The Destinations of Choice Initiative, sponsored by the College Board’s Community College Advisory Panel (CCAP) and the National Office of Community College Initiatives, is a project examining the strengths and challenges characterizing today’s community colleges. Through public forums and working papers such as this one, the College Board has launched a wide-ranging discussion about the pivotal role of community colleges in American education.

This working paper is not meant to be a definitive statement about the topic it addresses but is rather a work-in-progress designed to invoke a conversation among all educators about the place of community colleges in the twenty-first century United States.

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It’s Not a Math Problem: Why Focusing on Transfer Rates Diverts Us from Promoting Baccalaureate Completion for Community College Students

...[S]ince community college matriculants arguably are potential transfers until they either show up at a university or die...transfer rate calculations can never be fully reflective of student performance.

Arthur M. Cohen and Florence B. Brawer, 2003¹

For the past decade, state and federal education officials have been deeply concerned about the performance and productivity of higher education institutions. The recommendations of the Spellings Commission turned up the heat by insisting colleges and universities do a much better job of not only documenting their worth but in providing useful and reliable information to prospective students and families about critical features of their institutions.²

For community colleges a traditional measure of their productivity has been calculating the proportion of community college students who transfer to a four-year college or university. But the answer is elusive. Like visiting Alice’s wonderland, the transfer rate depends on how one defines transfer. The obvious and attractive calculation is simple enough: Divide the number of students who transfer to a four-year college or university by the total number of students attending a community college. Such a calculation, however, is anathema to community college presidents. They are quick to point out that community college students attend their institutions for a myriad of reasons other than transfer. Counting all students in the equation, they argue, unfairly marks them as failures (since such calculations are likely to yield a transfer rate in the range of 5 to 20 percent).³ A more reasonable calculation, they submit, would include only those students who have enrolled at a community college with transfer as their goal.

The presidents’ lament—not an unreasonable one—has led researchers and policymakers down a quixotic path to find the perfect transfer rate definition: a definition that compares the number of successful transfers to a predefined pool consisting only of those students who demonstrate an intention to transfer.

But this is where things start to unravel.

The debate regarding transfer rates has been ongoing for decades, producing a voluminous research literature that is, unfortunately, repetitive in argument and discouraging in result. Researchers have produced with great regularity studies that purport to provide a new way of measuring transfer. As community colleges have grown in influence (at least as far as enrollments are concerned), such analyses have become more elaborate. In a 2001 analysis of transfer, for example, the U.S. Department of Education produced no fewer than eight different definitions, calculating transfer rates that ranged from 25 to 52 percent (see Table 1, page 13).⁴ A more recent study in California presented six different calculations, producing transfer rates as low as 24 percent and as high as 67 percent.⁵

The effort to develop a “correct” transfer rate, whatever the methodology, is futile. While identifying a national transfer rate would provide a rigorous accountability measure to compare the effectiveness of institutions, such an effort is undone from the start by a lack of consensus on what constitutes a true transfer student, resulting in a maddening array of transfer definitions and transfer rates.

Let’s review the litany of problems.

A Slippery Slope—A Hole for Rabbits

A transfer rate calculation should only include students who intend to transfer to a four-year institution. On this, both community college boosters and critics agree. While transfer is an essential mission of community colleges, it is not the *only* mission. Nearly half of all students attending community colleges take courses that

grant no credit. Others enroll to upgrade a specific employment skill or earn a vocational certificate. Implicating these students in transfer is inappropriate.

But how can we accurately assess transfer intentions of students? Simply asking them has appeal and is a common practice. But students’ college plans are wonderfully unstable—a phenomenon that most educators encourage as part of the college exploration process.⁶ There is little consensus regarding the proportion of community college students who intend to transfer when they first enroll. The Community College Survey of Student Engagement reports that transfer is the first or second choice of nearly three-quarters of the students surveyed at their member institutions, but other researchers peg the proportion as well under 50 percent.⁷ These figures also do not account for students who begin at a community college with intentions other than transfer but who change their minds later. Community college advocates often speak of the transformative nature of their institutions, and there is research indicating that community colleges provide may boost student expectations.⁸ How should we measure the transfer expectations of late bloomers?

Clearly, deriving a transfer rate—and judging an institution’s productivity—based on the whim of student intentions is a dicey proposition.⁹ But let’s assume for the sake of argument that we could accurately measure student intentions and that these intentions remained relatively stable. Calculating the transfer rate still remains a puzzle because the transfer cohort is hard to nail down. Should it include all students attending a community college with transfer intentions (freshmen, sophomores) or just students who intend to transfer and who are eligible to do so? For example, in calculating the proportion of high school students who go on to college (referred to as the “college-going rate”), only the senior class is used as the denominator, not all of the students enrolled in high school. But such a neatly segregated graduating class does not exist at community colleges because students follow varying curricula, earn credits at different rates, and transfer at varying points in their academic career.

To circumvent the fluidity of students’ college plans and identify a more accurate transfer pool, many researchers believe that students’ course-taking behaviors are

better barometers of transfer intentions. Students enrolled in transferable, academic courses, such as collegiate math and English composition, are seen as more likely candidates for transfer. But this definition also runs into problems. While more stable than students’ stated intentions, reliance on course-taking patterns is imperfect because there are few universal, transfer-specific behaviors. Granted, “gatekeeper” courses such as mathematics and English composition are a central element in any transfer-going curriculum, but they are also essential for nontransfer majors, such as nursing, criminal justice, and computer technology, among others. (That’s why they’re called gatekeeper courses.) Moreover, transfer requirements vary widely, as does the “transferability” of courses. What might be acceptable to one four-year institution may not be acceptable to another.

Why not hedge our bets and use students’ transfer intentions *and* course-taking behaviors to create a transfer pool? ¹⁰ Unfortunately, this kind of low-rent convergent validity runs into problems too. Such a criterion restricts the transfer pool to a small puddle. While this definition identifies a pool of students almost certain to transfer, it also leaves out of the equation a significant number of students who end up transferring anyway. The Department of Education found that as the definition of transfer becomes more restrictive, the pool of students 1) looks more and more like the traditional college-going student; that is, young, white, and affluent; and 2) does not accurately account for a great number of students who successfully transfer (but who did not fall into the predefined transfer pool).¹¹ In other words, as the transfer denominator is refined, one winds up accounting for fewer and fewer transfers with greater and greater accuracy. Although the transfer rate goes up (sometimes startlingly so), it neither accounts for the wide diversity of students attending community colleges nor accurately measures the true number of transfers.

Trying a different point of attack in the pursuit of a defensible measure of transfer, researchers have employed more powerful statistical techniques. The attempt is not only to calculate an overall rate of transfer—clearly just about anyone can get rich doing that—but to do so in a way that accounts for differences among community colleges. For example, researchers in California compared the transfer rates of

community colleges by including in the transfer pool only those students who attempted collegiate math or English composition courses. They then statistically accounted for some of the factors that colleges could not control that are known to influence the transfer rate of students. These influences include the age of the student (younger students are more likely to transfer than older students) and student academic preparation (students with good high school grades are more likely to transfer than those with low grades). Community colleges in affluent areas enrolling freshly minted high school graduates with good grades have higher transfer rates than community colleges located in areas with less-prepared students. By leveling (statistically) the differences among institutions—such as accounting for the variation in the students they enroll—these researchers are able to make comparisons among community colleges a bit more palpable.

The trouble with these kinds of analyses, as smart as they are, is that they flatten out some of the things that matter—the educational back stories that provide context and texture. For example, calculating a transfer rate that accounts for differences in student preparation for college misses the point of why such a rate is derived in the first place. The researchers would argue that they are only trying to account for factors that colleges cannot control and for which their institutions should not be held responsible. But accommodating the disparate backgrounds of students—low income, race/ethnicity, immigrant status, disability, and academic preparation—is the essence of the community college mission. Community colleges, more than any other higher education institution in America, understand the inherent dilemmas in working with students with all kinds of risks that can undermine student achievement. It is the price of doing business. And if the transfer rate does not reflect these problems, how will they be addressed?

Do We Need to Measure Transfer?

Table 1 (page 13) presents transfer rates calculated by researchers using a variety of methods and national databases. The resulting rates range from 5 percent to 95 percent. Each definition is mathematically correct and each one has its adherents.

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But all produce a transfer rate with qualifications so significant that the advice of counsel is recommended. What is clear is that we don’t have a math problem; whatever else we can say about transfer rates, mathematics and statistics won’t define a clear winner.

To be fair, community college leaders are caught in a bind. They need a transfer rate that will be defensible to state and federal officials, which usually translates into a statistic that is both transparent and easily grasped. But they also want to present their institutions in the best possible light, applying an outcome measure that expresses the complexity of their missions and the diversity of the students who attend their institutions. Moreover, while they won’t say it publicly, they also need a figure that, if not especially high, at least compares well to that of their local competitors.

But they are not going to find it. As a measure of institutional productivity, the transfer rate is illogical, unreasonable, and impractical.

The first requirement of a completion measure is *completion*. Is “transfer” alone a successful outcome if a student never earns the baccalaureate degree? While a student’s transfer to a four-year institution should be celebrated, there is still a great deal of work to do, as any transfer student will freely confess.

Second, arguing that transfer is a primary measure of community college productivity is unreasonable because four-year institutions are the ones doing the admitting. Although community colleges have a genuine and critical role in preparing students for transfer, they have no say in who gains admission.

Finally, the transfer rate is impractical because it can’t do anything a good accountability measure should. No single measure has been adopted (and this is unlikely to change given the reasons we have already discussed). Moreover, the results are untrustworthy; slippery denominators don’t engender much confidence. Even the most sophisticated measures—perhaps defensible—are not transparent

enough for lawmakers often suspicious of the metrics developed by higher education leaders.

Recommendations: Dull and Unoriginal

Let’s dump transfer rates altogether. The only authentic measure of achievement for students seeking the baccalaureate is how many actually achieve that goal—a goal that involves community colleges *and* four-year institutions. Right now, however, four-year institutions are given a free pass regarding the ways in which they account for these students. This needs to change.

Rather than continue the search for an acceptable transfer rate—which links community colleges to a metric they do not control—four-year colleges and universities should simply report the number of community college students who applied, were admitted, and enrolled at their institution, just as they report admissions and enrollment figures for their first-year students. In addition, these institutions should report the persistence and B.A. completion rates for community college transfer students at their institutions, just as they report similar statistics for their first-year students. Closing the loop, both sets of reports should link student outcomes to the specific community college from which students originated their higher education careers.

These measures—simple, straightforward, and dull—provide several advantages. First, community colleges and four-year institutions are held accountable for their dual roles in helping students achieve the baccalaureate. Second, these measures of productivity are unambiguous, and there are fewer ways to game the results. Finally, the accountability measures are traditional markers of student success, and for good reason. They are easy to calculate, common to all institutions, relatively robust statistically, transparent to even the harshest critics, and useful to prospective students and families making college choices.

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There will be critics of this plan. Community colleges will argue that they will be unfairly judged for the academic success of students who only complete a handful of courses at their institution and then transfer. Four-year institutions will complain that community colleges will not be held accountable for students who never transfer. And just about everyone will insist that ignoring transfer rates will not play well in Washington and statehouses across the country. But such criticisms are neither unique nor especially persuasive.

To the first argument, students whose incidental use of the community college (e.g., dual enrollment, summer sessions) are hardly ever considered bona fide transfer students. The studies cited here almost always employ a definition that filters out such occasional users of the community colleges. What this plan requires, however, is that community colleges and four-year institutions establish what they believe to be a true transfer student. Perhaps this will be the “classic” junior transfer; that is, a student who earns up to half of his or her academic credits at a community college. Some research indicates that this is probably the best transition point for students wishing to earn the baccalaureate.¹² But local conditions may require a different cutoff figure.

To the second issue, community colleges will still be held accountable for students who do not transition to a four-year institution or who do not otherwise complete an A.A. degree, vocational certificate, or workforce training program. As with four-year institutions, these students are still on the books and will contribute to (or detract from) a college’s persistence rate. Baccalaureate completion is only one outcome measure among many for community colleges, reflecting the multiple missions of these institutions.

As for the political fallout of dumping transfer rates, it is clear that the current methods don’t offer much evidence of success. A quick look at Table 1 reveals few figures much over 50 percent even when the denominator is calculated in a variety of ways. If a 50 percent failure rate is seen as good enough, then we have a bigger problem than the disdain of politicians to worry about.

Coda

Do we know anything from the voluminous literature on transfer rates? Absolutely. We know that the transfer process works well for students whose backgrounds mark them as traditional beneficiaries of virtually all of America’s social, political, and cultural institutions: The young, the affluent, and academically well trained.¹³ But when researchers move beyond transfer rates and search for the variables that influence all students’ ability to transfer, such as Kevin Dougherty’s seminal 1994 book, *The Contradictory College*¹⁴, or Clifford Adelman’s extraordinarily rich 2005 data essay, *Moving Into Town—And Moving On: The Community College in the Lives of Traditional-age Students*¹⁵, we see clearly how narrow and derivative the debate on transfer has been. Indeed, the attention focused on the transfer rate deflects us from the hard work that is needed to significantly increase the number of students who actually transfer from a community college to a four-year institution and earn the baccalaureate degree. Like a runner on a treadmill, we have deluded ourselves that concentrating on the calculation of a transfer rate has something to do with helping transfer students arrive at their educational destinations when in fact we have only been running in place.

That community colleges have an essential stake in transfer is a given, but a focus on the transfer rate—one that is fair and defensible but also self-serving—has ensnared these institutions in a Gordian knot. By working to restrict the size of the transfer pool, they leave out of the calculation the very students for whom they express particular regard: students from underrepresented racial and ethnic minority groups, low-income students, and others. But casting a wider net only brings lower rates and political grief. In addition, the traditional rhetoric justifying low transfer outcomes because of the “varied missions of the community colleges” or “the diversity of their students’ backgrounds, demographics, and intentions”—however accurate—is wearing thin in a political and fiscal atmosphere that prizes completion above all.

The greater irony, however, is the almost complete absence of four-year colleges and universities in the debate on transfer. These institutions have managed to stake

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virtually no claim on these students, yet their responsibility for educating these individuals marks them as key players. The implacable response of many four-year institutions to calls for greater participation is both astonishing and disappointing.

Calibrating accountability measures on student B.A. attainment will link community colleges more tightly to their four-year college/university partners. In this partnership, the success of students becomes the focus. While the traditional completion measures endorsed here are imperfect, they will nonetheless starve the debate about transfer rates. More importantly, they will direct attention toward meaningful discussions regarding the baccalaureate completion rates of an increasing number of students who start their higher education careers at community colleges in the United States.

Table 1
Community College Student Transfer Rates Associated with
Different Definitions of Transfer

Researchers¹	Community College Transfer Pool Restricted to	Transfer Rate	Comments
Transfer Rates Based on All Students in a Predefined Sample/Population			
National Effective Transfer Consortium (NETC), 1989 (1)	All students enrolled for credit at one of the Consortium’s participating community colleges.	5%	NETC Consortium consisted of 28 community colleges (not nationally representative).
NETC Consortium, 1989 (2)	Number of transfers divided by the number of community college “leavers” (nonreenrolling students [spring to fall], who had not already earned a B.A. degree, or those concurrently attending or on leave from a four-year institution).	14.7%	
NETC Consortium, 1989 (3)	Number of transfers divided by the number of “leavers” (nonreenrolling students [spring to fall] with six or more credits at a community college who had not already earned a B.A. degree, or those concurrently attending or on leave from a four-year institution).	25.6%	
Grubb, 1991	All first-time college students who entered a community college directly from high school. (National High School and Beyond Survey).	20.2%	Reported in Dougherty, 1994
Dougherty, 1994	All entrants to community colleges who transferred within four years (regardless of program and aspiration).	15–20%	Meta-analysis of national and state-level transfer studies conducted by the author.
McCormick and Carroll, 1997 (1)	First-time, beginning community college students in 1989-90 who transferred to a four-year institution by 1993-94.	22%	Findings based on BPS: 90/94.
Bradburn, Hurst, and Peng, 2001 (1)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years (pp. 7–8).	25%	Findings based on the NCES 1990-94 Beginning Postsecondary Students Longitudinal Study (BPS: 1990/1994), a nationally representative sample of students who enrolled in postsecondary education for the first time between July 1, 1989, and June 30, 1990.
U.S. Dept. of Education, 2003 (1)	Students who began postsecondary education at a public two-year community college in 1995-96 and then transferred to a four-year institution within six years.	28.9%	Findings based on NCES 1996/01 (BPS: 96/01).

¹ Citations for all studies presented in Table 1 can be found in the Reference section.

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Dougherty & Kienzl, 2006	Students indicating that they attended a public two-year college as their primary institution in their first year of college who subsequently attended a four-year college within five years.	22% 38%	The first figure is based on findings from BPS:90. The second is based on NELS:88.
Researchers	Community College Transfer Pool Restricted to	Transfer Rate	Comments
Transfer Rates Based on Student Self-Reports of Transfer/B.A. Intentions			
McCormick and Carroll, 1997 (2)	First-time, beginning community college students in 1989-90 who transferred to a four-year institution by 1993-94 <i>and who expected to complete a B.A. degree or higher.</i>	39%	New transfer rate based on 25 percent of students in population.
Bradburn, Hurst, and Peng, 2001 (2)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years <i>and who expected to complete a bachelor’s degree or higher</i>	36%	New transfer rate based on 71 percent of students in original population.
Bradburn, Hurst, and Peng, 2001 (3)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years <i>and who reported that they were enrolled in an academic program.</i>	36%	New transfer rate based on 68 percent of students in original population.
US Dept. of Education, 2003 (2)	Students who began postsecondary education at a public two-year community college in 1995-96 and then transferred to a four-year institution within six years <i>and who had a B.A. degree goal.</i>	51%	New transfer rate based on 25 percent of students in original population.
Transfer Rates Based on Student Transfer-Related Behaviors			
Cohen and Brawer, 1996 (Transfer Assembly Project)	“All students entering the community college in a given year who had no prior college experience and who completed at least 12 college-credit units, divided into the number of that group who take one or more classes at an in-state, public university within four years” (p. 2).	21.5%	Rate is a 1996 calculation based on data submitted by 416 community colleges in more than 14 states, encompassing a total of 511, 996 students.
Adelman, 1999	First-time, beginning community college students who “earn more than 10 credits there and subsequently attend a four-year college and earn more than 10 credits from that institution” (p. 46).	26%	
Bradburn, Hurst, and Peng, 2001 (4)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years <i>and who were enrolled continuously for one year.</i>	37%	New transfer rate based on 63 percent of students from original population.
Bradburn, Hurst, and Peng, 2001 (5)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years <i>and who were enrolled anytime in one academic year.</i>	38%	New transfer rate based on 62 percent of students from original population.

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Researchers	Community College Transfer Pool Restricted to	Transfer Rate	Comments
Adelman, 2005 (1)	“The student (a) begins postsecondary study at a community college, (b) earns more than 10 additive credits [credits that count toward a degree] from community college before attending a four-year college, and (c) subsequently earns more than 10 additive credits from four-year college” (p. 14).	37%	Findings based on NCES Longitudinal Study of 1988, which followed subgroups to 2000; the Beginning Postsecondary Students Longitudinal Study of 1995-96, which followed sample to 2001; and other NCES data sets.
Adelman, 2005 (2)	Transfer rate based on definition above, but with the added restriction that the students earned “at least 30 community college credits, but less than 60 percent of all their undergraduate credits were earned at a community college” (p. 55).	96%	Transfer rate based on 18 percent of students in original population, referred to as community college “Tenants” in the Adelman essay.
Transfer Rates Based on Student Self-Report and Transfer-Related Behavior			
Bradburn, Hurst, and Peng, 2001 (6)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years <i>and who were pursuing an academic major or taking courses toward a B.A. degree or both.</i>	43%	New transfer rate based on 43 percent of students in original population.
Bradburn, Hurst, and Peng, 2001(7)	First-time, beginning community college students enrolled in credit courses who transferred to any four-year institution within five years <i>and who were pursuing an academic major and taking courses toward a B.A. degree or both.</i>	52%	New transfer rate based on 11 percent of students in original population.

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NOTES

¹ Cohen, A. and Brawer, F. (2003). *The American Community College* (4th Edition). San Francisco: Jossey-Bass, p. 59.

² *A Test of Leadership: Charting the Future of U.S. Higher Education: A Report of the Commission Appointed by Secretary of Education Margaret Spellings* (2006). Washington, DC: US Department of Education (www.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf).

³ Dougherty, K. J. (1994). *The Contradictory College: The Conflicting Origins, Impacts, and Futures of the Community College*. Albany, NY: State University of New York Press.

⁴ Bradburn, E. M., Hurst, D. G., and Peng, S. (2001). *Community College Transfer Rates to 4-year Institutions Using Alternate Definitions of Transfer*. (NCES 2001-197). Washington, DC: U.S. Department of Education, National Center for Education Statistics, Office of Educational Research and Improvement.

⁵ Horn, L. and Lew, S. (2007). *California Community College Transfer Rates: Who is Counted Makes a Difference*. MPR Research Brief (www.mprinc.com).

⁶ Researchers at the Community College Research Center at Columbia conclude in a recent review of the literature that “[w]hen analysts or community college educators suggest that students’ expectations be taken into account when examining student outcomes and college performance, they are implicitly assuming that expectations are stable and fixed characteristics of the student...But, rather, student goals and expectations are products of social processes, which interact with the factors that determine college outcomes. Moreover, if students’ expectations are not fixed, they could change over the course of the college experience, perhaps as students solidify their understanding of their own interests and capabilities. Alternatively, the colleges themselves might influence students’ expectations through counseling, career planning, or through good teaching that inspires students to gain confidence and causes them to raise their goals.” From Bailey, T. R., Leinbach, T., and Jenkins, D. (2006). *Is Student Success Labeled Institutional Failure? Student Goals and Graduation Rates in the Accountability Debate at Community Colleges*. New York: Columbia University, Teachers College, Community College Research Center (CCRC Working Paper No. 1), p. 16.

⁷ Community College Survey of Student Engagement (2006). *Act on Fact: Using Data to Improve Student Success*. (www.ccsse.org/publications/CCSSENationalReport2006.pdf). Researchers at the Community College Survey of Student Engagement reports that 50 percent of students it surveyed indicated that “transfer to a four-year college or university” was a primary goal, while an additional 21 percent listed transfer as a “secondary goal” (p. 5). In addition, Bailey, Leinback, and Jenkins (2006) report that 36 percent of first-time community college students enroll with an intention to transfer (p. 8).

⁸ See, for example: 1) Adelman, C. (2005). *Moving Into Town—and Moving On: The Community College in the Lives of Traditional-age Students*. Washington, D.C.: U.S. Department of Education; and 2) Bailey, Leinbach, and Jenkins (2006).

⁹ In their review of the literature, Bailey, Leinback, and Jenkins (2006) conclude that “colleges should use caution in considering initial goals as benchmarks against which to judge student achievement” (p. 18).

¹⁰ Bahr, P. R., Hom, W., and Perry, P. (2005). “College Transfer Performance: A Methodology for Equitable Measurement and Comparison.” *Journal of Applied Research in the Community College*, Vol. 13, No. 1.

¹¹ Bradburn, Hurst, and Peng (2001).

¹² Adelman (2005).

¹³ Pascarella, E.T. and Terenzini, P.T. (2005). *How College Affects Students: A Third Decade of Research* (Vol. 2). San Francisco: Jossey-Bass. In their review of the literature, Pascarella and Terenzini conclude that “...students who transfer from two-year to a four-year institution...[resemble] more their counterparts who initially enroll in four-year schools than their community college peers who do not transfer... Studies indicate that the transfer students (compared with nontransfers) are more likely to come from families in higher socioeconomic brackets; to be younger, white, and male; to have been on an academic track in high school; to have higher degree expectations and be more academically oriented; to have attended school during the day and reached higher academic achievement levels (although somewhat below those of students who went directly to four-year institutions); to have been more academically and socially integrated in the institutions from which they were transferring; and to have been continuously enrolled” (p. 377).

¹⁴ Dougherty (1994).

¹⁵ Adelman (2005).