What Can Student Right-to-Know Graduation Rates Tell Us About Community College Performance?

Thomas Bailey, Peter M. Crosta, and Davis Jenkins

August 2006

CCRC Working Paper No. 6

Address correspondence to:

Davis Jenkins
Community College Research Center
Teachers College, Columbia University
525 W. 120ᵗʰ Street, Box 174
New York, NY 10027
Tel: (312) 953-5286
E-mail: pauldavisjenkins@yahoo.com

Abstract

This paper examines the validity of the Student Right-to-Know (SRK) graduation rates as measures of community college performance. The SRK rates are the only performance measures available for every undergraduate institution in the U.S. Many community college educators argue that the SRK rates give an inaccurate picture of community college outcomes. Using data from national longitudinal surveys of college students, we examined criticisms commonly leveled against the SRK measures and found that the SRK rates do indeed yield a biased and potentially misleading picture of individual community college student outcomes. We then analyzed the usefulness of the SRK rate as a measure of relative institutional performance. Specifically, we considered whether using different measures of performance would result in substantially different rankings of Florida's 28 community colleges. Contrary to initial expectations, we found that the relative performance of the colleges did not change substantially as different students or outcomes were used. Even after we adjusted for student characteristics that might affect outcomes, the college rankings were still fairly stable.

Table of Contents

Introduction

Over the last decade, the national movement toward accountability in education has spread to higher education. In the past, four-year colleges were judged more on the basis of the prestige of their faculties and the abilities of their students than on how effectively they served those students. The performance of community colleges was judged on their enrollment growth and their ability to provide the opportunity for a postsecondary education to a wide variety of students, many of whom face substantial economic, social, and academic barriers to educational attainment. Indeed the accreditation process for both two- and four-year colleges traditionally focused on process and inputs, rather than on student outcomes (Burke 2005; Dougherty & Hong, 2006). Recently, though, many states have introduced various types of postsecondary accountability measures based on student outcomes, and, in some cases, have tied at least some amount of funding to performance on outcome measures (Burke, 2005). Accreditation agencies have also begun to place greater emphasis on student outcomes.

In 1990, reflecting this trend, Congress passed the Student Right-to-Know and Campus Security Act (Public Law No: 101-542) as an amendment to the 1965 Higher Education Act. The Student Right-to-Know (SRK) law requires that all colleges report graduation rates to the National Center for Education Statistics (NCES) in order for their students to receive federal financial aid. These rates are part of the Integrated Postsecondary Education Data System (IPEDS) and are referred to as the Student Right-to-Know graduation rates.

As measures of college performance, the SRK rates are controversial, especially for community colleges. Critics argue that they understate the success of colleges and are based on a framework more appropriate to four-year colleges than community colleges. SRK rates are, however, the only student outcome measures available for all (or almost all) community colleges. Moreover, starting with the cohort of students entering college in 1999 (the data for which were released in 2002), the rates are now available annually.

The purpose of the study reported on here is to analyze the nature and validity of the SRK graduation rates as they relate to community colleges: How serious is the bias contained in the rates? Under what circumstances, if any, can they provide useful information that can guide educators and policymakers as they work to improve the performance of community colleges? How can the process of determining the rates be improved? Do the problems with them outweigh their benefits?

Some critics argue that *any* graduation rate is a poor measure of community college performance in the belief that many community college students enroll with no intention or wish to graduate or to transfer (Horn & Nevill, 2006). They contend that such students are seeking specific skills that they can successfully acquire without completing a certificate or degree. We have addressed that issue elsewhere (Bailey, Jenkins, & Leinbach, 2006). In this paper, we focus primarily on SRK rates as measures of institutional performance.

Following this introduction, we describe the SRK rates and discuss the criticisms typically leveled against them. We consider whether they could be used in gauging the relative

performance of colleges even if they yield biased information. This would be so if the bias is similar for all colleges. We compare the SRK graduation and transfer rates with alternative performance measures based on different cohorts and different outcomes. Using data from Florida, we analyze whether using different measures of performance results in significantly different rankings of Florida's 28 community colleges. We conclude with a discussion of the implications of our findings for efforts to use SRK to improve community college performance and success for community college students.

The Student Right-to-Know Graduation Rate

SRK rates are based on what is referred to as the Graduation Rate Survey (GRS) cohort. This cohort is comprised of all first-time (in college), full-time, degree-seeking students who enroll at given time (say, the fall semester of a given academic year). These students are followed for one and one half times the period of time normally required to complete the degree or certificate program in which each is enrolled. Thus, students in an associate degree program, which is expected to be completed in two years, would be followed for three years. The tracking period for certificate students would vary based on the length of the program. For purposes of calculating the rate, once students are included in the cohort they remain in it even if they switch to part-time enrollment or are no longer enrolled. After three years the graduation rate is calculated simply by dividing the number of completers (those who earned their credential within their respective tracking periods) by the total number of students in the cohort. NCES also requires colleges to report a transfer rate for students who transfer to another college without completing a credential at their initial college.

SRK data are available yearly starting with the cohort entering college in 1994. NCES considers the data on the 1994 through 1998 cohorts as "early release" data, however, and cautions users about relying on them. NCES considers the data starting with the 1999 cohort (released in 2002) "final" release data. By the middle of 2006, data were available for the 1999, 2000, and 2001 cohorts. They will be issued annually in the future.

As the name of the original law implies, the Student Right-to-Know and Campus Security Act was passed initially as a way to inform potential students about the performance of colleges that they might consider attending. This purpose is perhaps less important for community college students, who tend to go to the college nearest to them, than for applicants to four-year institutions, who are more likely to search more broadly. More recently, educators and policymakers have turned to graduation rates both as a measure of accountability and as a source of information that would be helpful in improving college performance. The SRK graduation rates comprise one measure used in the state higher education report cards published biannually by the Center for Public Policy in Higher Education (National Center for Public Policy and Higher Education, 2004). At the state level, Colorado has implemented a performance agreement for the state's community college system that calls for increases in state-wide SRK graduation rates. Colleges involved with Achieving the Dream: Community College Count, a national initiative funded by Lumina Foundation for Education and others, and designed to improve student success in community colleges, have also used graduation rates as a first step in

understanding where improvements in their college performance need to take place (see www.achievingthedream.org).

The SRK graduation and transfer rates are the only easily available and reasonably consistent outcome measure for all community colleges. While IPEDS provides a great deal of cross-sectional information on individual colleges, the SRK rates are the only data based on a longitudinal measure of student achievement. Other national datasets, such as the Beginning Postsecondary Student Survey (BPS) and the National Education Longitudinal Study (NELS), allow for robust tracking of student outcomes, and much of what we know about what happens to students in college comes from research using these datasets, but the samples are not large enough to allow measurement of outcomes for individual colleges. Thus research using them tends to focus on the impact on outcomes of *individual* student characteristics and behaviors, while educators and policymakers would also like to understand the effects of *institutional* characteristics and policies.[1] Other datasets, such as the Community College Survey of Student Engagement (CCSSE), are large enough to analyze individual colleges, but they are cross-sectional and do not track students over time and therefore do not have comprehensive measures of student experience or performance. Some state datasets have been used to compute more sophisticated and comprehensive measures of college performance (Ewell, Schild, & Paulson, 2003), but they vary by state; do not provide a national picture; and, at least so far, are difficult to use.

In 2006, the Secretary of Education's Commission on the Future of Higher Education endorsed a national unit record longitudinal data system that would address many of the weaknesses cited by the critics of the SRK graduation measure, but that system would require new legislation and even then would confront significant technical and financial hurdles. The Student Right-to-Know and Campus Security Act was passed in 1990, but the first data considered "final" by NCES, graduation rates for the cohort entering community colleges in the 1999-2000 academic year, did not appear until 2002. So, while the national unit record system might be created, it will be at least several years before it would provide longitudinal data that would allow measurement of the performance of individual institutions.

Therefore, despite its weaknesses, the SRK graduation rates remain the only college performance measures based on longitudinal student experience that are easily available for almost all community colleges, or even for a reasonable sample of those colleges. Researchers interested in analyzing college performance, or educators and policymakers interested in gaining insights into the strengths and weaknesses of college performance can, in principle, learn a great deal from the SRK rates.

---

[1] CCRC has analyzed the individual and institutional correlates of graduation rates using NELS and IPEDS elsewhere (Bailey, Calcagno, et al., 2006), but we used aggregate measures of institutional characteristics such as enrollment size. We were not able to measure the effects of individual institutions.

Community College Critiques of the SRK Graduation Rates

At the same time, as a measure of college performance, the SRK graduation rate is controversial, especially for community colleges, which criticize the measure on several grounds: (1) The definition of the GRS cohort leaves room for interpretation by colleges and states, and, therefore, the graduation rate based on that cohort may not be consistent across institutions and states. (2) Students who transfer and earn credentials at institutions other than the one they first entered are counted as non-completers; therefore the rate understates the success of the first institution in graduating or transferring its students. (3) The three-year time frame is too short to fairly measure community college student outcomes since many students take longer to graduate. (4) Because the rate is based on first-time, full-time degree-program students, it does not capture the experience of the majority of community college students, who attend part time. (5) Community colleges enroll relatively large numbers of students who face economic, social, or academic barriers to college success that are not accounted for in raw graduation rates. We will examine the evidence on each of these critiques.

Inconsistent Definitions

One problem with the SRK rates is that colleges and state systems have some flexibility in determining which students to include in their cohorts and how to calculate graduation and transfer rates. All of the major elements that define the NCES GRS cohort – the time period of college attendance and students' status as first time, full time, and degree seeking – are subject to some degree of interpretation by the reporting institutions or states. The composition of the cohort can change depending on when the cohort is established, how entities define first-time students, the exact meaning of a credit or contact hour, what programs are considered degree seeking, and whether the college or the student determines degree-seeking status. In some states, such as Florida, the state ultimately decides the parameters used to define the GRS cohort for all the colleges and thus also the parameters that determine the published success measures. Such a state policy facilitates comparison of the rates within the state, but different state definitions could lead to significant differences in average graduation rates among states that are not necessarily the result of differences in performance. Thus, comparisons of individual colleges across states should be done with an awareness of state definitional differences.

Student Mobility and Transfer

Increasingly, students attend more than one college during their undergraduate education and very often transfer prior to completing a program at their initial institution. For example, one out of five students in the National Education Longitudinal Study of 1988 who earned a bachelor's degree received it from a four-year college other than the college where they initially enrolled (Adelman 2003, 2006). Moreover, findings from BPS:96/01 (U.S. Department of Education, 2003) indicate that up to 40 percent of first-time community college students attended more than one institution during the six-year period in which they were tracked.[2] Adelman has pointed out

---

[2] Authors' calculations.

that students change colleges for many legitimate reasons that do not necessarily reflect on the quality of the college. In a 2004 article in *The Chronicle of Higher Education*, he stated, "Why should institutions be judged for choices, made by students, that are beyond their control? College students are legal adults, after all" (Burd, 2004, p. A1). Even if a student goes on to graduate at the new college – certainly a positive outcome for the student – that student is counted as a non-completer under the SRK definition. Thus the SRK measures suggest that students experience less educational success as a result of attending a community college than they actually do.

Given this student mobility, the argument follows that SRK institutional graduation rates, measured at a single institution, must under-report actual rates of student completion. To determine how serious the bias of the SRK graduation rate is, we compared it to the graduation rate based on BPS:96/01, a longitudinal database that tracks individual students across multiple institutions (U.S. Department of Education, 2003). For both the SRK rates and BPS we limited the sample to public two-year institutions.

To assess the accuracy of the overall SRK measure, we constructed an SRK-like variable using BPS. BPS enables tracking of individual students even as they transfer among colleges. Because we did not know the length of programs for certificate students in the BPS sample, we assumed that all certificate programs lasted one year, and thus used three semesters as the 150 percent benchmark for these students. We should also note that the BPS cohort started in 1996, while the SRK cohort started in 1999, three years later. This difference could make the comparison problematic, although the national SRK rates do not change substantially from year to year. Overall, according to the SRK data, for the cohort starting in fall 1999, 22.3 percent of first-time, full-time community college students in degree programs attained a postsecondary credential in their starting institutions within three years.[3] In contrast, we found that 18.1 percentage of all first-time, full-time degree-program community college students in the BPS:96/01 sample earned a credential (certificate or associate degree) from their institutions of first enrollment within three years. Therefore, if anything, the SRK rates seem to slightly overstate the actual average institutional graduation rate for community colleges nationally. Further, 19.7 percent of the BPS:96/01 cohort earned a certificate or associate degree at *any* institution within three years. The comparison indicates that the difference between institutional and individual graduation rates is not large for a three-year period. It further suggests that as long as the 150-percent-of-"normal" time-to-degree benchmark is used, then the SRK graduation rates do not present a significantly more negative picture of community college performance than rates that could follow individual students across transfers. Moreover, based on our comparison to BPS, the SRK rates appear to be a slight overestimate of actual institutional graduation rates.

In retrospect, it is probably not surprising that taking account of transfers would not yield a much higher graduation rate, since the most important reason for transfer would be to complete a bachelor's degree and the three-year period is not long enough to earn a BA even under ideal conditions. What happens if we consider transfer to a four-year institution to be a positive outcome for a community college student even if no degree is completed? NCES does ask colleges to report the number of students in a cohort who transfer to other institutions without

---

[3] All SRK rates are authors' calculations from IPEDS Graduation Rate Survey 2002-03 (U.S. Department of Education, 2003).

completing a degree. Colleges are asked to report only transfer-out students for whom they actually have evidence of a subsequent enrollment at another eligible institution (of any level).[4] There are potentially serious problems with the transfer measure. Often colleges do not know what happens to their students once they leave, so the reported transfer rate reflects colleges' data-gathering capacities rather than the actual rate. If colleges follow the NCES directions, the reported transfer rates must underestimate the actual rates. Using BPS as a benchmark we investigated the extent of this underestimate.

We compared the SRK transfer rate to an equivalent rate calculated from BPS:96/01. According to the SRK data, 15.9 percent of the first-time full-time SRK cohort transferred within 150 percent of expected graduation time without earning a certificate or degree. Of the same BPS:96/01 cohort used in a calculation of an SRK-like graduation rate, 31.3 percent of the students transferred within three years without earning a degree. Limiting the calculation to transfers to two- and four-year institutions drops the rate to 29.4 percent. Just 19.7 percent of the cohort transferred to a four-year institution within three years. Thus the actual three-year transfer rate for full-time students who did not earn an associate degree is about twice the rate reported in the SRK data. This wide discrepancy undoubtedly results from difficulties that colleges face in tracking and documenting transfers. If colleges interpret the transfer measure as transfer to a four-year institution, however, then the rate is not that far off, although the NCES instructions do not indicate that transfers should be restricted in this way. Consequently, the SRK transfer rate appears to substantially undercount total transfers and is therefore too inaccurate to provide any meaningful measure of student transfer, an important function of community colleges.

Three-Year Measurement Period

Another criticism of the SRK rates is that three years is too short a period to judge the graduation rates of community colleges, even for full-time students. Moreover, the large number of community college students who enroll in remediation must spend a significant amount of time (from a single class to a full semester or more) in courses that do not contribute credits toward their degree. According to our calculations using the BPS:96/01 data, the institutional graduation rate (graduation from the institution of initial enrollment) would rise almost eight percentage points if a six-year graduation rate were used. The problem with increasing the time period, though, is that it would increase the difference between the institutional graduation rate and the individual graduation rate (graduation from any institution). We found from BPS:96/01 that the three-year institutional rate is 18.1 percent and the individual graduation rate is 19.7 percent, but the six-year institutional graduation rate is 25.8 percent while the six-year individual graduation rate is a much higher 39.5 percent.

Therefore, while using a three-year graduation rate certainly gives a more negative picture of community college graduation rates (since many students go on to graduate in subsequent years), it does minimize the bias created by attendance at more than one institution. The use of institutional graduation rates and the short time period do tend to make community college institutional graduation rates look low, but lengthening the time period would increase the extent

---

[4] Transfer-out students include only those who did not complete a program or graduate from the initial institution. Eligible institutions are those offering at least one-year degree programs and eligible for Title IV aid.

to which the institutional rate underestimates the individual rates, making the institutional rates that much less reflective of actual student outcomes.

Exclusion of Part-Time Students

A fourth weakness in the SRK rates is that they are based on the assumption of full-time student enrollment. Since the majority of community college students attend part time for at least some of their enrollment, the underlying basis of the rates does not reflect the experience of the typical community college student (Dellow & Romano, 2002). According to BPS:96/01, 58 percent of the students starting in community colleges in fall 1995 met the SRK criteria (full-time attendance in a degree program). Since this figure is for first-semester enrollment for first-time students, it suggests higher rates of full-time enrollment than is normal for community college students. A more accurate figure comes from the National Postsecondary Student Aid Study 1999-2000, which is a cross-sectional survey of all students in postsecondary education enrolled during the academic year. Calculations from this survey show that only 22 percent of all students enrolled in credit-bearing courses in a community college during the 1999-2000 school year enrolled full time and for the full academic year (exclusive of summer). Thus the SRK cohort excludes a majority of community college students.

It is, nevertheless, understandable why the National Center for Education Statistics established this definition since the inclusion of part-time students would raise the question of how long they *should* be expected to take to graduate. Using full-time students at least establishes a consistent comparison based on a meaningful time period.[5] In any case, including part-time students would clearly lower the measured rates. Below, we use Florida data to compare graduation rates using part-time students to rates, such as the SRK, using only full-time students.

Taking Account of Differences in Student and Institutional Characteristics

In general, community college students face greater social, economic, and academic barriers to their success in college when compared with students in four-year schools. Community colleges also vary in the level of the personal barriers faced by their students. To be fair, efforts to compare the performance of different colleges need to take into account the characteristics of the students each serves (Astin, 1997). In other research (Bailey, Calcagno, et al., 2006), CCRC developed a method for adjusting for student characteristics in assessing the relative performance of community colleges. Using a multinomial regression, we estimated expected graduation rates for every community based on information on each college's student characteristics, institutional resources, size, and other factors. We found that larger colleges and colleges with a larger

---

[5] The categorization of students using full-time status in the SRK rates introduces another distortion. Students are included in the cohort as long as they *start* as full timers. (Students are counted as full time if they are enrolled full time at the time that the college takes its enrollment census – usually on October 15.) Even if they subsequently become part time, they continue to be counted in the cohort. Some of these students will change to part time, but they will be retained in the sample. Indeed, according to BPS:96/01, about 30 percent of students who start out as full timers enroll part time for at least one semester within three years. (Authors' calculation.) Consequently, the SRK graduation rate underestimates the completion rate for those students who maintain full-time status throughout their period of enrollment.

minority and part-time share of the student body tended to have lower graduation rates. Therefore, student body characteristics do systematically influence the SRK graduation rates, thus potentially leading to biased conclusions if the raw graduation rates are used. Researchers can, however, improve the accuracy of the SRK rates by using IPEDS data, which is easily available from NCES, to adjust rates for student and institutional characteristics.

Student Characteristics and College Rankings Using Different Cohorts and Outcome Measures

All of the criticisms mentioned above are reasonable, and we will discuss their implications at greater length in the conclusion. Yet, even if the absolute SRK graduation rates are biased, they still could provide important comparative information if the bias is similar for all colleges. In this section we test whether using different cohort definitions (for example, inclusion of part-time students) or different outcome measures (for example, use of a longer time period) will result in rankings of colleges that differ significantly from rankings based on the SRK rates.

To conduct our analysis, we used unit record data on Florida community college students obtained from the Florida Department of Education. The sample consisted of about 50,000 first-time community college students who entered in the fall of 1999. Information such as age, race, sex, and entrance exam scores, as well as college enrollment and outcome data over a period of 14 trimesters (four years plus two trimesters), were included. Students in the sample were flagged if they were a member of the federal Graduation Rate Survey (GRS) cohort used to produce the SRK graduation rates.

We compared the demographic characteristics and course-taking patterns of students in the GRS cohort with those of two less-restrictive community college student cohorts – one including all first-time students considered by their colleges to be enrolled in a degree program and the other including all first-time students. This comparison addressed the criticism that the GRS cohort does not reflect the experience of the typical community college student. SRK rate outcomes were then compared to a more comprehensive set of outcomes including retention and transfer, and the time period was extended from three years to nearly five years, addressing the criticism that the SRK time period is too short and does not take account of transfers. Next, we compared the rankings of colleges based on these different measures to assess the quality of the information on relative college performance in the SRK rates. We also compared the rankings based on the SRK rates to rankings based on rates adjusted for the effect of student characteristics, thus exploring the criticism that the SRK rates do not account for differences among community colleges in the characteristics of their students. We used the Friedman test of ranks and Kendall's coefficient of concordance to test the relationship between the rank order of colleges based on different cohorts and outcome measures.

Cohort Characteristics

Table 1 presents descriptive characteristics for three cohorts: the GRS cohort used for the SRK rates; a cohort of all first-time college students; and a cohort of first-time, degree- or occupational certificate-seeking students who may be full or part time in the first term (also called first-time, degree-seeking students in this paper).The second column in the table can be considered the group that comes closest to describing the freshman population at community colleges, since it includes all first-time students. GRS students were on average younger, more likely to be White, more likely to receive financial aid, and more likely to have higher tests scores, although they were also more likely to have limited English proficiency. GRS students also carried more credits and were less likely to enroll in developmental education.

Table 1: Cohort Descriptive Statistics – Florida Community Colleges

Student Characteristics	GRS (Std. Dev.)	All First-Time Students (Std. Dev.)	First-Time, Degree-Seeking (Std. Dev.)
Age	20.8 (6.5)	21.9 (7.8)	20.7 (6.4)
Female	54.0	54.6	53.0
White	62.7	61.2	61.3
Black	15.0	16.0	16.4
Asian	3.1	3.0	2.9
Hispanic	18.0	18.5	18.2
American Indian	0.4	0.5	0.5
No race	0.8	0.9	0.9
US citizen	87.9	87.5	88.9
Permanent alien	9.1	9.6	8.3
Limited English proficiency	7.2	5.6	3.4
HS diploma	88.2	85.6	86.8
GED	7.0	9.2	9.1
Other HS credential	2.3	1.6	1.5
Math entrance exam score	421.1 (100.2)	404.1 (100.7)	401.5 (98.1)
Verbal entrance exam score	466.6 (93.8)	457.7 (95.2)	455.3 (93.9)
Federal aid term 1	624.1 (1080.3)	489.1 (961.8)	476.8 (930.7)
State aid term 1	107.2 (259.1)	68.6 (215.2)	59.5 (197.3)
Institutional aid term 1	227.1 (557.0) 958.3	157.8 (465.3)	154.1 (474.6)
Total aid term 1	(1,312.6)	715.5 (1170.1)	690.46 (1127.7)
Received any financial aid in term 1	55.5	44.6	44.7
Full-time term 1	89.1	55.6	54.9
Program length term 1	61.0 (5.2)	60.8 (6.5)	60.2 (5.6)
Number of credits enrolled term 1	9.5 (4.5)	7.3 (4.8)	7.1 (4.7)
Enrolled in developmental education	50.8	54.8	61.7
Tuition	1,096.9 (121.5)	1,098.6 (109.1)	1,101.4 (109.7)
Observations	27,944	50,091	36,042

Student Outcomes for Different Cohorts

Perhaps with the exception of their English ability, all of these characteristics suggest that the GRS students would be more likely to graduate and to do so in a shorter amount of time. Table 2 confirms this expectation. A much larger percentage of the GRS cohort completed a degree or certificate regardless of the time allowed for an outcome, and they were more likely to transfer to the State University System. GRS students also completed more non-remedial credits than did students in the other cohorts at each measurement time and were more likely to persist to the next spring and the next fall.

Table 2: Outcomes by Cohort – Florida Community Colleges

Outcome	GRS (Std. Dev.)	All First-Time Students (Std. Dev.)	First-Time, Degree-Seeking (Std. Dev.)
Graduated within 2 years (6 trimesters)	14.6	9.9	7.5
Graduated within 3 years (9 trimesters)	25.9	18.5	16.8
Graduated within 4 years (12 trimesters)	31.4	23.5	22.2
Graduated within 14 trimesters	33.3	25.3	24.2
Graduated within 150% of program length as measured by term 1 program length (150% ranges from 1 to 14 terms)	24.5	17.7	16.8
Graduated within 150% of program length as measured by term 1 program length (150% is either 5 terms or 9 terms)	23.8	17.1	16.4
Transferred to State University System within 2 years (6 trimesters)	11.9	8.1	7.0
Transferred to State University System within 3 years (9 trimesters)	18.3	13.2	12.7
Non-remedial credits accumulated in 2 years (6 trimesters)	26.0 (21.4)	20.4 (20.1)	20.9 (19.9)
Non-remedial credits accumulated in 3 years (9 trimesters)	32.1 (26.1)	25.8 (25.0)	26.8 (25.1)
Non-remedial credits accumulated in 4 years (12 trimesters)	35.2 (28.5)	29.0 (27.7)	30.2 (27.7)
Non-remedial credits accumulated in 14 trimesters	36.9 (29.7)	30.6 (29.1)	31.9 (29.1)
Remedial credits accumulated in 2 years (6 trimesters)	3.2 (5.0)	3.4 (5.1)	3.9 (5.3)
Remedial credits accumulated in 3 years (9 trimesters)	3.4 (5.2)	3.6 (5.3)	4.1 (5.6)
Remedial credits accumulated in 4 years (12 trimesters)	3.5 (5.3)	3.7 (5.4)	4.2 (5.7)
Remedial credits accumulated in 14 trimesters	3.5 (5.4)	3.7 (5.5)	4.3 (5.8)
Total credits accumulated in 2 years (6 trimesters)	29.2 (21.7)	23.8 (20.7)	24.8 (20.5)
Total credits accumulated in 3 years (9 trimesters)	35.4 (26.7)	29.4 (25.9)	30.9 (25.9)
Total credits accumulated in 4 years (12 trimesters)	38.7 (29.2)	32.7 (28.7)	34.4 (28.7)
Total credits accumulated in 14 trimesters	40.4 (30.5)	34.4 (30.2)	36.2 (30.2)
Fall-spring retention	77.2	70.5	74.7
Fall-fall retention	62.8	55.7	58.6
Only enrolled in first of 14 trimesters	9.5	15.9	15.2
Only enrolled in first and second of 14 trimesters	9.0	10.2	10.9
Transfer to State University System, complete, or persist over 9 trimesters	57.5	49.8	50.9

Figure 1 presents data for credit accumulation and Figure 2 for the percent of program completion for the three cohorts by trimester. They illustrate two points. First, among the outcomes we examined, measures based on the GRS cohort were in all cases higher than such measures for the more representative cohorts. Second, extending the time allowed beyond three years (nine trimesters) to measure levels of achievement or success did increase those measures, although the rate of increase slowed after about three years. Moreover, the GRS cohort scored higher on these measures of success after nine trimesters than the other cohorts did after 14.
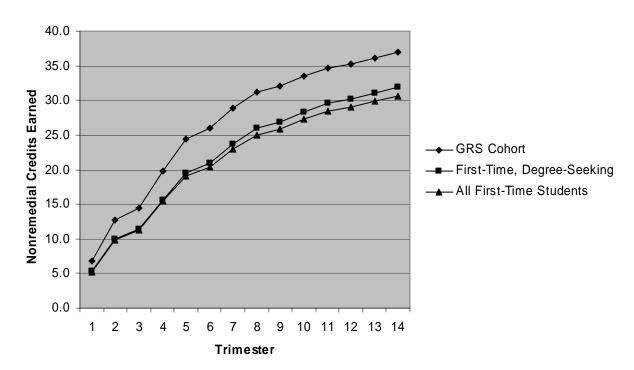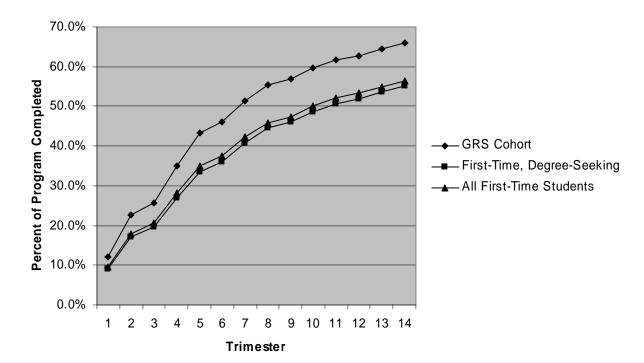
Figure 1: Average Cumulative Nonremedial Credits Earned

Figure 2: Average Percentage of Program Completed

Institutional Rankings Using Different Cohort and Outcome Measures

Does the relative performance of Florida's 28 community colleges change when we use these different cohorts and outcome measures? For each college and cohort we computed the means of several outcome variables and ranked the colleges. We then used statistical tests to see if the rank order of the colleges changes with different outcome measures. We found that the rankings of colleges were quite similar for the three cohorts; that is, there were fairly strong rank-order correlations. Rank-order tests produced concordance coefficients that range from 0.70 to 0.83, with the strongest associated with ranks of graduation outcomes. Thus, a college's position did not change much across the three cohorts, regardless of the outcome measure.

Table 3 further addresses the issue of whether or not the cohort matters when comparing the relative performance of institutions. It shows the GRS and all first-time student cohorts ranked on five standard educational outcome measures. It is easy to see that the numbers are closely related, on average, for a particular outcome in any given row. The bottom rows of the table provide some statistics for each pair of ranks to better understand the comparisons made in the table. The average deviation (Avg. Dev.) is the average absolute value of the change in rank from one cohort to another, and we see an average deviation of only four positions for the outcomes shown. The median deviation (Med. Dev.) is also quite small, with each outcome displaying a median rank change of three positions. Finally, Kendall's coefficients of concordance are presented, and they show relatively large and significant relationships between

14

the ranks. These findings suggest that changing the cohort will have little effect on the relative rank of the colleges – as long as each college uses an identical definition for the cohort.

Table 3: Rank Correlation Summary Within Outcomes, Between Cohorts

Florida Community College	Graduate in 14 Terms		Graduate in 150%[†]		College Credits in 14 Terms		Transfer to SUS in 3 Years		Fall-Fall Retention	
	GRS	All	GRS	All	GRS	All	GRS	All	GRS	All
A	9	9	9	8	10	9	7	7	13	14
B	17	26	11	26	9	20	21	24	17	17
C	10	8	7	6	11	6	13	12	19	13
D	1	1	1	1	6	1	3	1	6	2
E	22	10	20	12	20	15	23	18	25	22
F	26	23	26	22	23	23	19	15	24	19
G	24	20	23	21	26	22	24	17	26	25
H	11	28	25	28	18	28	16	28	18	28
I	13	17	8	11	17	24	5	11	14	26
J	27	25	27	25	24	26	26	25	20	23
K	7	6	4	4	4	3	4	5	2	3
L	2	2	5	3	22	19	28	27	5	5
M	21	24	15	24	3	7	15	23	8	16
N	19	16	19	14	5	4	6	6	9	6
O	28	27	28	27	8	5	27	26	27	20
P	5	3	18	7	25	17	17	8	4	1
Q	23	19	24	20	27	27	25	22	28	27
R	4	22	3	23	1	11	1	10	1	7
S	12	11	10	13	13	16	20	20	10	21
T	14	15	12	16	12	13	12	13	16	18
U	18	21	16	18	7	14	14	19	7	10
V	3	4	2	2	2	2	2	2	3	4
W	20	18	21	19	21	21	22	21	22	24
X	6	5	6	5	28	25	11	4	23	11
Y	8	7	14	9	16	10	18	14	15	8
Z	16	14	13	15	14	18	10	16	11	15
AA	25	12	22	10	19	8	9	3	21	9
BB	15	13	17	17	15	12	8	9	12	12
Avg. Dev.	4.0		4.1		4.2		3.7		4.6	
Med. Dev.	2.0		2.0		3.5		3.0		3.0	
Kendall's Coefficient	0.85*		0.84*		0.89**		0.91**		0.86*	

* and ** denote significance at 0.05 and 0.01, respectively.

[†]This outcome measures whether or not the student graduated within 150% of expected time to completion, which is 150% of program length. It is similar to the measure used by SRK.

We also performed a similar analysis comparing college rankings using the GRS cohort and the "all-student" cohort for the same outcome measures shown in Table 3. Table 4 presents the results. For these comparisons, the question is whether or not, within a particular cohort, changing the outcome measure will lead to different relative comparisons of institutions. These tests strongly reject the null hypothesis that these rankings are not related.[6] In addition, many of the rows have the same or very similar rankings for each outcome measure. The results suggest that colleges that are good at graduating students also tend to be more successful at retaining students and at helping them accumulate credits, for example.

Using raw measures of student outcomes to compare colleges may yield misleading conclusions if an institution enrolls students who are less academically prepared or face greater life challenges than do students at other colleges. To control for the composition of the student body, we computed regression-adjusted outcome means and then compared these adjusted values across colleges and cohorts. We did this by using the Florida student unit record data to estimate a regression model that predicts an outcome measure controlling for various student characteristics, and an institutional fixed effect that represents the specific impact of the institution. We could then predict the outcome measure for each college, controlling for the characteristics of the students, and rank these outcome measures.

---

[6] Additional tests were performed that compared each outcome with the other four outcomes within each cohort. The null hypothesis of unrelated ranks was rejected at the 0.01 level for two cases, the 0.05 level for 14 cases, and the 0.1 level for three cases (out of 20 possible permutations).

Table 4: Rank Correlation Summary Among Outcomes and Within Cohorts

Florida Comm. College	GRS Cohort						All First-Time Students				
	Graduate in 14 Terms	Graduate in 150%[†]	College Credits in 14 Terms	Transfer to SUS in 3 Years	Fall-Fall Retention		Graduate in 14 Terms	Graduate in 150%[†]	College Credits in 14 Terms	Transfer to SUS in 3 Years	Fall-Fall Retention
A	9	9	10	7	13		9	8	9	7	14
B	17	11	9	21	17		26	26	20	24	17
C	10	7	11	13	19		8	6	6	12	13
D	1	1	6	3	6		1	1	1	1	2
E	22	20	20	23	25		10	12	15	18	22
F	26	26	23	19	24		23	22	23	15	19
G	24	23	26	24	26		20	21	22	17	25
H	11	25	18	16	18		28	28	28	28	28
I	13	8	17	5	14		17	11	24	11	26
J	27	27	24	26	20		25	25	26	25	23
K	7	4	4	4	2		6	4	3	5	3
L	2	5	22	28	5		2	3	19	27	5
M	21	15	3	15	8		24	24	7	23	16
N	19	19	5	6	9		16	14	4	6	6
O	28	28	8	27	27		27	27	5	26	20
P	5	18	25	17	4		3	7	17	8	1
Q	23	24	27	25	28		19	20	27	22	27
R	4	3	1	1	1		22	23	11	10	7
S	12	10	13	20	10		11	13	16	20	21
T	14	12	12	12	16		15	16	13	13	18
U	18	16	7	14	7		21	18	14	19	10
V	3	2	2	2	3		4	2	2	2	4
W	20	21	21	22	22		18	19	21	21	24
X	6	6	28	11	23		5	5	25	4	11
Y	8	14	16	18	15		7	9	10	14	8
Z	16	13	14	10	11		14	15	18	16	15
AA	25	22	19	9	21		12	10	8	3	9
BB	15	17	15	8	12		13	17	12	9	12
Kendall's Coefficient	0.672**						0.6975**				

* and ** denote significance at 0.05 and 0.01, respectively.

[†] This outcome measures whether or not the student graduated within 150% of the expected time to completion, which is 150% of the program length. It is similar to the measure used by SRK.

Table 5 shows the rankings for two cohorts – the GRS cohort and the group of all first-time students – on three outcome measures using regression-adjusted rates and unadjusted rates. Table 5 also compares adjusted and raw outcome measures for graduation, credit attainment, and retention measures for these two cohorts. Two main issues are addressed with these rankings. First, we are able to see if there is a difference in ranks between the adjusted and unadjusted outcome measures across cohorts and within outcomes. Although not explicitly shown in the table, on average, the change in position between adjusted and unadjusted rankings within each cohort is less than five ranks, with a median around three. There is a less striking change in ranks within the cohort of all students for each of the three outcomes shown. These findings suggest that although regression-adjusting is a theoretical improvement over a comparison of raw measures, it may not have a substantial impact in practice since it does not significantly change the relative performance of institutions.

The second issue addressed in Table 5 concerns the comparison of colleges using only the adjusted outcome measures for each cohort. After using regression to account for student characteristics that might affect outcomes, we would expect there to be very little difference, if any, in the ranks across cohorts. The last row in Table 5 supports this hypothesis, since we found very little movement in the ranks between the GRS and all first-time student cohorts. The average deviation is about three ranks and the median about 1.5. Though not shown here, coefficients of concordance support all of the statements made above with at least a 0.05 level of significance (and some at 0.01). Note that across all three outcome measures both the average and median deviations are smaller for the adjusted rankings than for the unadjusted ones. Adjusting the rankings brings a greater level of consistency to the ranks between different cohorts, as expected, and it provides a way to compare institutions without focusing on their heterogeneous student populations. However, as mentioned above, rankings using the adjusted and unadjusted measures produce similar results – colleges that perform well based on unadjusted measures also tend to perform well based on adjusted measures.

Table 5: Adjusted and Unadjusted Outcome Ranks

Florida Comm. College	Graduate Within 150%[†]					College Credits in 14 Terms					Fall-Fall Retention			
	Adjusted		Unadjusted			Adjusted		Unadjusted			Adjusted		Unadjusted	
	GRS	All	GRS	All		GRS	All	GRS	All		GRS	All	GRS	All
A	12	9	9	8		15	12	10	9		18	19	13	14
B	5	24	11	26		9	20	9	20		10	11	17	17
C	13	13	7	6		13	21	11	6		23	26	19	13
D	1	2	1	1		6	3	6	1		7	5	6	2
E	18	12	20	12		21	11	20	15		22	17	25	22
F	28	27	26	23		27	27	23	23		27	27	24	19
G	21	17	23	19		23	16	26	22		25	23	26	25
H	27	28	25	28		28	28	18	28		28	28	18	28
I	19	18	8	13		25	25	17	24		21	21	14	26
J	26	26	27	25		22	24	24	26		11	12	20	23
K	6	4	4	3		7	4	4	3		5	3	2	3
L	3	3	5	4		10	9	22	19		8	8	5	5
M	8	5	15	21		1	1	3	7		1	2	8	16
N	25	23	19	15		14	13	5	4		16	16	9	6
O	24	25	28	27		3	5	8	5		4	4	27	20
P	2	1	18	7		4	2	25	17		2	1	4	1
Q	17	10	24	22		24	18	27	27		26	25	28	27
R	10	21	3	24		2	10	1	11		3	6	1	7
S	15	15	10	11		19	19	13	16		13	22	10	21
T	14	14	12	14		12	15	12	13		15	20	16	18
U	23	22	16	18		16	23	7	14		9	18	7	10
V	7	8	2	2		5	6	2	2		6	7	3	4
W	22	20	21	20		20	22	21	21		20	24	22	24
X	4	6	6	5		26	26	28	25		24	10	23	11
Y	11	11	14	9		8	8	16	10		19	15	15	8
Z	20	19	13	16		17	14	14	18		17	14	11	15
AA	9	7	22	10		11	7	19	8		12	9	21	9
BB	16	16	17	17		18	17	15	12		14	13	12	12
Avg. Dev.	2.6		4.1			3.1		4.2			2.7		4.6	
Med. Dev.	1.0		2.0			2.0		3.5			1.5		3.0	

[†] This outcome measures whether or not the student graduated within 150% of expected time to completion, which is 150% of program length. It is similar to the measure used by SRK.

Conclusion

What is the quality of the information contained in the Student-Right-to-Know graduation rates? All of the criticisms that we reported are reasonable and are supported empirically: the definition leaves considerable room for interpretation by colleges and states; the three-year period is too short; the rate counts transfers as non-completion; part-time students, who comprise the majority of all community college students, are not included; and the rates do not take account of differences in the characteristics of students served by different colleges. All of these problems suggest that the actual rate for any given college, by itself, has little meaning. Simply saying that the graduation rate for a particular community college is 25 percent provides very little useful information to anyone. This is especially true in the context of the general public's understanding of college based on the experience of four-year institutions and particularly selective four-year institutions, which have much higher graduation rates. In this light, most community college graduation rates seem low, particularly to members of the public and policymakers who do not consider the many barriers that community college students face.

Is there an alternative that would give a less negative image of college performance, yet still accurately reflect community colleges and their students? Some alternatives would actually cast the colleges in a more negative light. As we have seen, including part-time students will lower any outcome measure with a fixed time period. Using alternative time periods based on enrollment intensity (i.e., full or part time) might give a more realistic picture of community college performance in serving part-time students. A six-year time period might be more appropriate for a half-time student, although it would require a longer reporting period. Perhaps NCES could release two measures, one based on the GRS sample and another using a longer time period for samples with part-time students.

Lengthening the time period from three to six years, for example, would raise graduation rates, but as long as students are not tracked across transfers, doing so would not result in large increases. As we have seen from our calculations using BPS, the rate at which students graduate from their original institution increases from only 18.1 to 25.8 percent when a six-year rate is used. Legislators or editorial writers upset by an 18 percent graduation rate are not likely to have a different view of a 26 percent rate. As long as the rates continue to be calculated by institution, without following students as they transfer, then a three-year rate is probably better than a longer term rate because the longer time period does not increase the graduation rate by very much, and it produces a much larger gap between institutional and individual rates. Moreover, our analysis of the Florida data suggests that college rankings do not change much as we move from a three-year period to a longer time.

A more significant problem involves the combination of the time period and the absence of transfer data. According to our calculations using BPS, the graduation rate about doubles after switching to a six-year graduation rate and tracking students who leave their initial institution. A "graduation rate" that involves tracking students through transfer would require a national unit record system, although, in many states with large public systems, tracking students into the public universities would capture much of the relevant activity. An intermediate alternative might be a rate that includes graduation and transfer (for students who do not graduate). As we

have seen, NCES has tried to do that, but we concluded that the non-graduate transfer rate is highly inaccurate and probably unreliable. Many colleges and states have started to use National Student Clearinghouse data, which at least allow colleges to determine if a student has registered at another college, although the data provide limited information about the success of students who transfer. Since the infrastructure for using Clearinghouse data is already in place, it would be a low-cost improvement over the current flawed SRK transfer measure. Still, as we have seen from the Florida data, college *rankings* are not significantly influenced by a shift from an institutional graduation rate to measures that count graduation, transfer, or continued enrollment as positive outcomes.

Although current SRK graduation rates are, to say the least, misleading as a measure of individual community college student outcomes, our comparative analysis of rankings based on different cohorts and outcome measures suggests that they nevertheless contain useful information when they are used for comparison of institutional performance. Such a comparison is improved when the SRK graduation rates are adjusted for college characteristics. This can be done by comparing the actual graduation rates to expected graduation rates estimated using regression to control for the characteristics of each college's students. Colleges with actual graduation rates that exceed their predicted rates are doing better than they would be expected to, based on their characteristics.[7] But we should note that in our Florida analysis, the college rankings were not significantly changed, either by using alternative cohorts and outcome measures, or by adjusting rates for student characteristics. Looking at the actual SRK graduation rates is a reasonable first approximation of *relative* college performance.

Certainly, the SRK rates are crude measures and their use should be combined with both short- and long-term efforts to improve the information available to colleges, policymakers, and the public and promote the use of those data to improve student success, not merely for compliance and accountability. The following are some suggestions for improving the usefulness of the SRK rates and moving beyond them to improve information on college performance in general.

Graduation rates can be useful as the basis of discussion among colleges within each state. Comparisons across states have to be made carefully since state policies and decisions at the state level about the nature of the cohorts and the definition of "graduation" can influence the rates. For example, Florida guarantees junior status at its universities to community college students who earn an associate degree. This gives an incentive for transfer students to complete the associate degree rather than transfer earlier (or perhaps just not bother to apply for the degree despite earning enough credits). With respect to defining cohorts, California uses an algorithm based on course-taking patterns to define "degree seeking." Other states rely on student declarations of their intentions. The California method tends to eliminate students with less concrete goals. Thus both states have high SRK rates – for the 2001 cohort, Florida has the fourth highest rate and California the sixth.

What does this state focus imply for productive work with the SRK data? First, any national level analysis of the determinants of graduation rates must control for state effects. The regression analysis we used to calculate the expected graduation rates uses state dummy

---

[7] Expected graduation rates and the coefficients used to compute them are available from CCRC.

variables and they are indeed among the strongest variables in the analysis (Bailey, Calcagno, et al., 2006).

Second, each state should standardize the cohort and graduation definitions used within the state. Many states do this, but others allow individual institutions to make their own definitions within the parameters set under IPEDS.

Third, states should help their institutions use of the National Student Clearinghouse to produce a more accurate measure of transfer rates.

Fourth, thoughtful discussion of graduation rates (including rates adjusted for student and institutional characteristics), the causes of differences among those rates, and ideas for improving them should be a regular component of state-wide meetings and professional development of college personnel within a state. These discussions can be enriched by research conducted within the states that uses quantitative and qualitative information not available in national level datasets such as IPEDS and that can further explain differences in outcomes.

Fifth, as shown by the Florida data used in this paper, the state data systems in many states are a potentially rich source of information that would allow much more accurate and informative measures of college performance than the SRK rates. Recent research suggests that extensive data are available in many states (Ewell et al., 2003). However, they are often not organized or stored in an easily usable form, state and institutional level staff may not have time and capabilities to use them in any more than the most simplistic ways, and privacy and political concerns often prevent tracking of students across educational sectors.

The federal government should also take several steps to increase the use and improve the usefulness of the SRK rates and other outcome measures. First, it can work toward better standardization of cohort and graduation definitions. Second, it can ask for different outcome measures including retention and credit accumulation. Third, NCES could promote better measures of transfer by encouraging the use of the National Student Clearinghouse data. Fourth, the government could encourage and fund efforts for states to work together to improve their state data systems, to make them more consistent with each other, and to discuss the factors and policies that might account for the variation in institutional performance across states.

In the end, a national student unit record system would allow the robust analysis of institutional performance, far superior to the institutional aggregates now available, assuming that the data collected were made available to colleges and the states. In principle, we are in favor of such a system, although we make this judgment without accounting for the cost of developing and maintaining it. What we have proposed is a process that takes intermediate steps to improve the SRK and related rates, that encourages states to improve their data, and, most important, that calls for more thoughtful use of whatever data are available to improve the performance of colleges. A great deal of progress can be made in this endeavor even without a national unit record system. Thus, if such a system is to be developed, it should be done in a way does not discourage these other efforts.

This paper sought to assess the strength and usefulness of the information contained in the Student Right-to-Know graduation rates. While the measure is controversial and easily criticized, it has the advantage of being an outcome measure that is available for all colleges. Our conclusion is that the graduation rate itself for an individual college has little meaning. Judgments about that percentage will be based on individual experiences and frames of reference. The rates are more useful in a comparative analysis, especially within states, since differences among state averages probably result from variations in state policies and perhaps also in methods of measurement. But even comparisons have limited usefulness unless they are part of a process that uses a variety of data, research, and perspectives to understand the causes of those differences and that uses that discussion to improve performance. This process will be most productive if it is done collectively, among institutions and states. Thus, if the Student-Right-to-Know graduation rate measure, despite its limitations, were used at the foundation of a discussion aimed at both improving data and strengthening the performance of community colleges, it would have the potential to serve as a useful tool for improving student success.

References

Adelman, C. (2003). *Replicating the "tool box" hypotheses: Challenges in the data sets*. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Portland, OR.

Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, DC: U.S. Department of Education.

Astin, A. W. (1997). How "good" is your institution's retention rate? *Research in Higher Education, 38*(6), 647-658.

Bailey, T. R., Calcagno, J. C., Jenkins, D., Leinbach, T., & Kienzl, G. (2006). Is Student Right-to-Know all you should know? An analysis of community college graduation rates. *Research in Higher Education, 57*(5), 491-519.

Bailey, T. R., Jenkins, D., & Leinbach, T. (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.

Burd, S. (2004, April 2). Graduation rates called a poor measure of colleges. *The Chronicle of Higher Education*, *50*(30), p. A1.

Burke, J. C. (Ed.). (2005). *Achieving accountability in higher education: Balancing public, academic, and market demand*. San Francisco: Jossey-Bass.

Dellow, D., & Romano, R. (2002). Measuring outcomes: Is the first-time, full-time cohort appropriate for the community college. *Community College Review, 30*(2), 42-54.

Dougherty, K. J., & Hong, E. (2006). Performance accountability as imperfect panacea: The community college experience. In T. Bailey & V. S. Morest (Eds.), *Defending the community college equity agenda*. Baltimore: Johns Hopkins Press.

Ewell, P. T., Schild, P. R., & Paulson, K. (2003). *Following the mobile student: Can we develop the capacity for a comprehensive database to assess student progression?* Indianapolis: Lumina Foundation for Education.

Horn, L., & Nevill, S. (2006). *Profile of undergraduates in U.S. postsecondary education institutions: 2003-04. With a special analysis of community college students*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

National Center for Public Policy and Higher Education. (2004). *Measuring up 2004: The national report card on higher education*. San Jose, CA: Author.

U.S. Department of Education (2003). *Beginning Postsecondary Students Longitudinal Study second follow-up data files and ECB*. NCES 2003-160 [Data CD-ROM]. Washington, DC: National Center for Education Statistics.