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COMMUNITY COLLEGE STUDENT OUTCOMES:

Limitations of the Integrated Postsecondary Education Data System (IPEDS) and Recommendations for Improvement

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Introduction

The Integrated Postsecondary Education Data System (IPEDS) is the most comprehensive source of national data on postsecondary institutions available. All institutions that participate in federal student financial assistance programs authorized by Title IV of the Higher Education Act are required to complete a series of surveys on a broad range of institutional data. However, despite the comprehensive participation of postsecondary institutions, the IPEDS data have several limitations, particularly for answering questions about student outcomes. Moreover, because of the complexity and diversity of community colleges and their students, the limitations of the student outcomes data are greater for answering questions about community colleges and their students than for four-year institutions.

This report addresses the problem of the inadequacies of IPEDS student outcomes data for understanding community college student outcomes. It covers five topics:

- the intended purposes of IPEDS and uses of the data
- the data collected
- shortcomings of IPEDS data for understanding student outcomes
- recommendations that have been made by others to improve the data collected by IPEDS or to make better use of the existing data
- our recommendations for using existing data more appropriately and for modifying data collection to provide more useful information about community college student outcomes.

A wide variety of sources were consulted in writing this report, including:

- articles in higher education publications such as *Inside Higher Ed* and *The Chronicle of Higher Education*
- reports related to IPEDS by the United States Department of Education
- research on using IPEDS for understanding community college student outcomes
- reports by state education entities, policy groups, and higher education research groups that use IPEDS data
- interviews with several individuals with expertise pertaining to the reporting and use of IPEDS and other student outcomes data.

In August 2008, the Higher Education Act reauthorization was signed into law. The reauthorization called for the formation of a group within 90 days to assist in making improvements to the reporting of student outcomes for two-year degree granting institutions. To date, this group has not been formed. With the heightened awareness of the important role two-year colleges play in sustaining the nation's economic competitiveness, it is important that data improvements be made soon. This report could be useful for that group or for other efforts to improve the IPEDS data on student outcomes at community colleges.

Purpose and Uses of the Integrated Post-Secondary Education Data System

The National Center for Education Statistics (NCES) is charged with collecting and disseminating statistics on the condition of higher education in the United States. Consistent with this mission, the purpose of the Integrated Postsecondary Education Data System is to describe the universe of postsecondary institutions (National Center for Education Statistics [NCES], n.d.). Comprehensive data collection for IPEDS began in 1993 in response to the passage of the 1992 Higher Education Act. The key student outcomes data – the graduation, transfer-out, and retention rates – were developed in response to the enactment of the *Student Right-To-Know and Campus Security Act* in 1990 (P.L. 101-152). The intent of the act was to provide consumer information to protect parents and students from institutions that enroll students but fail to retain them. The new law and the requirement for IPEDS reporting occurred in the context of a growing focus in Congress on accountability in higher education arising out of concerns over growing student loan defaults and rising tuitions (Zumeta, 2005). IPEDS data are used in federal and state reporting, as well as by policy and research organizations concerned with issues of higher education performance and student outcomes.

Federal Uses of IPEDS Data

The federal government has an interest in data on postsecondary institutions related to its role in funding student financial aid programs. Members of Congress can use IPEDS data to find information on institutions in their districts or on the national condition of postsecondary education. Additionally, IPEDS is a data source for a large number of federal reports on the condition of postsecondary education. For example, NCES annually publishes the *Digest of Education Statistics*, a compilation of statistics on elementary, secondary, and postsecondary education including enrollment, expenditures, and demographics.

The federal government is also interested in providing consumer information on postsecondary institutions to aid would-be students and their parents in making decisions about which college to attend. In particular, the College Navigator is available on the NCES website to allow consumer access to information about colleges such as graduation rates and tuition charges.

State Uses of IPEDS Data

Data from IPEDS are also used by state higher education systems for benchmarking and public reporting purposes. Minnesota, for example, uses the IPEDS retention and graduation rate data to assess the state's performance in meeting its higher education goals and to benchmark its performance against the performance of other states (Minnesota Office of Higher Education, 2008).

Policy and Research Organizations' Uses of IPEDS Data

IPEDS data are also used by policy and research organizations to address policy questions at the state and national levels. For example, the National Center for Higher Education Management Systems (NCHEMS) uses IPEDS to provide data and analyses to aid states in setting policy related to higher education. Of note, NCHEMS compiles a variety of state-level education statistics, some of which use IPEDS data, on their HigherEdInfo.org website. Additionally, the National Center for Public Policy and Higher Education uses data from IPEDS in grading states on the performance of their higher education systems for its biennial *Measuring Up* report.

Other policy and research organizations use IPEDS data to examine student outcomes at postsecondary institutions. For example, The Education Trust has used IPEDS data to create peer analyses for the purpose of providing information on the relative performance of similar four-year institutions (The Education Trust, n.d.).

Growing Interest in Accountability in Higher Education

A growing interest in accountability in higher education, and a shift of focus from institutional inputs to student outcomes (Zumeta, 1998), has spurred changes to IPEDS. This focus on accountability is clearly seen in the *Student Right-to-Know and Campus Security Act* which intended the data on graduation, transfer-out, and retention rates to be used as a source of consumer information. The definitions of these rates have shaped state-level accountability reporting and consequently, shortcomings in IPEDS data are mirrored in shortcomings in state-level

accountability reporting. For example, because IPEDS includes only full-time students in the reported graduation rates, state accountability reporting is skewed heavily toward traditional students who attend full-time. This is a growing problem across American higher education as non-traditional enrollments rise, but is especially problematic for community colleges, as discussed in detail below. Additionally, as IPEDS is unable to provide data on direct student learning, state accountability reporting has used graduation rates as a proxy for student learning – an accommodation that has proven unsatisfactory to interests inside and outside the academy.

Overview of Data Collected and Method of Data Collection

A wide variety of information on higher education institutions is collected through the IPEDS surveys. As shown in Table 1, this information covers institutional characteristics, numbers of degrees awarded, enrollments, human resources, finance, graduation rates, and on financial aid.

Table 1
Data Collected for the Integrated Postsecondary Education Data System

Data Categories	Data Collected
Institutional Characteristics	■ Instructional programs offered by institutions ■ Student charges ■ Admission requirements ■ Organizational information such as sector and control of the institution
Degree Completions	■ Number of degrees/awards conferred
Human Resources	■ Employees assigned by position ■ Number of full- and part-time staff by occupational activity ■ Number of full-time faculty by contract length ■ Tenure of full-time faculty by academic rank ■ Number of new employees by occupational activity ■ Salaries
Fall Enrollment Data	■ Full-time and part-time fall enrollment ■ State or other jurisdiction of residence at time of admission for first-time students ■ 12-month unduplicated headcount ■ Institutional activity (credit and/or contact hours) ■ Fall-to-fall retention rates for full-time and part-time, degree-seeking students
Finance	■ Revenues by different sources ■ Expenses by different functions ■ Physical plant assets and indebtedness ■ Endowment investments
Financial Aid	■ Number of students receiving different types of aid ■ Average amount of aid received by students
Graduation Rates	■ Number of students entering the institution as full-time, first-time seeking a degree or certificate ■ Number of first-time, full-time, degree or certificate seeking students who completed a degree or certificate within 150% of normal program time[1] ■ Number of first-time, full-time, degree or certificate seeking students who did not complete a degree but transferred to another institution

Overview of Data Collected and Method of Data Collection

These data are self-reported by postsecondary institutions or systems. They are collected via web-based surveys that are administered three times a year:

In the fall, data are collected on:

- institutional characteristics
- completions
- 12-month enrollment (state of residence and field of study are collected in even-numbered years; age of first-time, first-year students is collected in odd-numbered years).

In the winter, data are collected on:

- human resources (detailed data are mandatory in odd-numbered years)
- fall enrollment
- finance.

In the spring, data are collected on:

- fall enrollment and finance data for institutions that did not certify their data as complete and correct in winter
- student financial aid
- graduation rates.

Of particular interest for the purposes of this report are the data on student outcomes. Broadly, there are two types of student outcomes data reported to IPEDS: awards received by students and rates of retention, graduation, and transfer.

IPEDS Data on Student Outcomes

The most basic type of data on student outcomes reported to IPEDS is the number of awards issued by an institution over the course of a year. Each fall, institutions report the total number of degrees and certificates awarded between July 1st and June 30th, by gender, race/ethnicity, level (e.g., certificate, associate) and instructional program. The number of awards counted is not necessarily equal to the number of students receiving awards because some students receive multiple awards. If a student receives two different awards, each award is counted. For example, a student may be awarded a certificate and an associate degree within the one-year time period. For this student, the institution would report one certificate and one associate degree awarded. Similarly, a student who receives two different degrees in different programs of study would also be counted twice for receiving an award; that is, the institution would report one award for each program of study.

Aside from the total number of awards given by an institution over the course of a year, institutions are also required to report on retention, graduation, and transfer-out rates (see Table 2). *These rates are the only data reported to IPEDS that track students longitudinally.* Each of these rates is calculated for cohorts of first-time, degree-seeking students who initially enroll in the summer or fall terms. Retention rates are reported separately for full-time and part-time students, whereas graduation and transfer-out rates are reported only for students who enter the institution attending full-time (defined as enrolled in 12 or more credits or 24 or more contact hours).

Overview of Data Collected and Method of Data Collection

Table 2
IPEDS Student Outcomes Rates: Graduation, Transfer-Out, and Retention

Student Success Measure	Who gets included in the rate?	Who gets counted as a success?	For which groups are rates reported?
Retention Rate	Students who: ■ enter in summer or fall and ■ enroll in courses creditable toward a formal award or ■ take remedial courses and are considered degree-seeking for the purposes of financial aid eligibility determination.	Students who: ■ re-enroll the following fall or successfully complete a program by the following fall term.	Separate rates are calculated for part-time and full-time students.
Graduation Rate	Students who: ■ enter in summer or fall and ■ enroll full time and ■ enroll in courses creditable toward a formal award or ■ take remedial courses and are considered degree-seeking for the purposes of financial aid eligibility determination.	Students who: ■ earn a formal award within 150% of normal time frame, or ■ complete at least a 2-year transfer program that counts as credit toward a bachelor's degree and allows the student to enter a bachelor's program as a third-year student.*	■ all students ■ all female students ■ female students by race/ethnicity ■ all male students ■ male students by race/ethnicity ■ students who receive athletically related student aid by sport, gender, and ethnicity*** ■ students who receive a Pell Grant, those who receive Federal loans but not a Pell Grant, and those who do not receive Federal loans or a Pell Grant.****
Transfer-Out Rate	Students who: ■ enter in summer or fall and ■ enroll full time and ■ enroll in courses creditable toward a formal award or ■ take remedial courses and are considered degree-seeking for the purposes of financial aid eligibility determination.	Students who: ■ transfer out within 150% of time to completion to any institution if the sending institution can provide documentation of the transfer.**	■ all students ■ all female students ■ female students by race/ethnicity ■ all male students ■ male students by race/ethnicity ■ students who receive athletically-related student aid by sport, gender, and ethnicity*** ■ students who receive a Pell Grant, those who receive Federal loans but not a Pell Grant, and those who do not receive Federal loans or a Pell Grant.****

* Beginning 2008-2009, institutions will report students who complete within 100%, 150%, and 200% of normal time to completion (see http://nces.ed.gov/IPEDS/news_room/ana_Changes_to_8_22_2008_188.asp).

** Presumably transfer rates will also be reported for 100%, 150%, and 200% of normal time to completion as well. However, the IPEDS website does not currently indicate this.

*** Graduation rates for students receiving athletically-related aid are no longer required for IPEDS as of the 2007-2008 year.

**** This is a new requirement announced in July of 2008 (see http://www.airweb.org/page.asp?page=1601). Presumably this will be required for the transfer-out rates as well.

Shortcomings of the Graduation, Transfer-Out, and Retention Rates

The graduation, transfer-out rates, and retention rates are the only IPEDS data that track students longitudinally. For selective four-year institutions the graduation, transfer-out, and retention rates are generally useful. Most students at selective four-year universities attend for the purpose of earning a degree, attend on a full-time basis each year, enter well-prepared to succeed at college-level work, and enjoy a relatively high level of institutional resources. However, the rates are less valid for making inferences about student outcomes in less selective four-year institutions and in community colleges, especially if such outcomes are compared to those students in selective institutions. Students at less-selective institutions are less likely to attend full-time and, at community colleges, attend for a variety of purposes. At less-selective institutions, students also enter far less prepared for college-level work and most of these institutions have far fewer resources than do selective institutions.

Rates for Community Colleges are Especially Problematic

For community colleges in particular, the usefulness of the success rate data is limited by two problems. First, there is a *measurement* problem with the rates; outcomes are not reported for many students and are often poorly tracked for those students who are included in the rates. Second, there is a *comparison* problem. It is difficult to draw valid conclusions from a comparison of institutional rates because differences in rates can be explained by a variety of factors – many of which do not reflect institutional quality. Reporting data that are poor measures of student outcomes misrepresents the success of educational institutions and their students. Furthermore, comparing institutional outcomes without appropriately accounting for differences in missions, student bodies, and state policies creates false impressions of the relative productivity of institutions.

The Measurement Problem with IPEDS Graduation, Transfer-Out, and Retention Rates

There are five reasons for the community college completion rate measurement problem.

(1) Unclear student goals complicate the assessment of meaningful outcomes for students.

It is difficult for colleges to determine student purposes for attending community college. In contrast to four-year institutions where it is reasonable to assume that all students enroll with the intention of earning a bachelor's degree, community college students attend for a variety of purposes. Although many community college students enroll in programs to complete a degree or certificate, others enroll for personal enrichment, to take adult education courses, to take a small set of courses to learn a specific skill (Bailey, Leinbach, and Jenkins, 2006), or to take advantage of the low cost and convenience of community colleges to "try out" college (Adelman, 2005).

The diverse reasons for student enrollment complicate efforts to identify degree-seeking students because colleges have not typically devised accurate, or agreed upon, methods for collecting data on students' goals. Some institutions and college systems determine who is a degree-seeking student by asking students to self-report whether or not they intend to earn a degree or certificate. However, students' stated purpose for attendance may not always reflect their true reason for attending. Depending on when and how the data are collected, students may indicate that they are degree-seeking for the purpose of getting financial aid even though they do not intend to earn a degree (Perry, n.d.). Additionally, many have argued that students' stated intention of transferring or earning a degree reflects socially desirable responding rather than true intention (e.g., Townsend, 2007). Further complicating the task of determining a student's goal is that goals change, particularly among students who enter community college unfamiliar with the options, and colleges typically do not have procedures to track changes in students' reported goals.

As an alternative to capturing goals through student self-reporting, some institutions use student course-taking patterns to determine which students are degree-seeking. This usually involves designating a minimum number of completed units and can include particular courses. Such behavioral measures exclude students who are intending to earn a degree, to the extent that students try, but fail for a variety of reasons, to reach the required threshold of completed units to exhibit "degree intent." Consequently,

some methods for identifying community college students will include students who are not actually degree-seeking while others will exclude students who are degree-seeking. In either case, the difficulty in determining which students are seeking a degree hinders the tracking of meaningful outcomes for them.

(2) Many students are excluded.

Graduation and transfer-out rates only include students who attend full time and begin in the summer or fall term. This restriction was intended to level the playing field across colleges since some colleges serve much higher proportions of part-time, low-income students. Limiting graduation and transfer-out rates to "like" students across colleges was felt to lead to more meaningful comparisons.[2] But this choice has made graduation rate data virtually meaningless because fewer than half of community college students fit these criteria. In fact, national data suggest that only 39% of first-time, public two-year students attended full time, initially enrolled in the fall or summer, and planned on earning a degree or certificate. In contrast, 43% of beginning public two-year students planned on earning a degree or certificate but either did not attend full time during their first term of enrollment or enrolled at a time other than the summer or fall.[3] The restrictions based on attendance and initial term of enrollment disproportionately exclude certain groups of students. In particular, the graduation and transfer-out rates tend to exclude adult students who are more likely to attend part time (Council for Adult Experiential Learning in partnership with the National Center for Higher Education Management Systems, 2008). National data suggest that among degree-seeking students at public two-year institutions, 61% of students age 23 or younger enrolled full time during their first semester compared to 32% of students who were older than 23.[4] Limiting the measures of student outcomes to full-time students will also most likely exclude lower-income students who need to work more while attending school.

Graduation and transfer-out rates overestimate student success because the students included in the rates are more likely to complete than the students who are not included. Students who begin full time in the summer or fall semester are likely to be younger and higher-income students – characteristics that correlate with greater success.

(3) Time allowed for completion is unrealistic and problematic for certificates.

Currently, graduation and transfer-out rates are reported for 150% of the "normal" time to completion. However, beginning in 2008-2009, graduation rates will be reported for 100%, 150%, and 200% of normal time to completion.[5] For the majority of community colleges this is a maximum of four years of tracking students (based on a normal completion time of two years for an associate degree). Although the increased time limit is more realistic for community college student completion, it may still be too short. Most community college students attend part-time at some point during their enrollment, including a sizable proportion of students who enroll in the summer or fall and attend full time in their first term. Specifically, national data indicate that 34% of degree-seeking public two-year students who attended full time during their first fall term enrolled part time for at least one term over the next three years.[6] In addition to the students who enroll part time at some point, large numbers of students who enter community college needing remediation also render the current tracking period too short.

Both the 150% time limit and the newly extended time limits are problematic when applied to certificate earners. Currently, IPEDS community college rates are reported three years after the cohort of degree seekers entered the institution. Technically, students who earn certificates should only be included in the completion rate if they completed in 150% (or 200%, beginning in 2008-2009) of the time required to complete the certificate. In most cases this will be less than three years and certainly less than four years. It is unclear, however, that all institutions have been adhering strictly to this definition and not simply counting all students who complete within three years. Consequently, certificate completion rates may not actually be based on completion within 150% or 200% of the normal time frame and may over report completion for that time frame.

(4) Student mobility complicates tracking completion and identifying first-time students.

Community college students are highly mobile – with nearly half attending multiple institutions (Peter and Cataldi, 2005). Because students tracked in the graduation and retention

rates are not tracked across institutions, completion is often undercounted when students switch to another community college and complete there.[7] In fact, an analysis by the National Center for Higher Education Management Systems found that cumulative graduation rates for two-year college students, tracked nationally, continued to grow through the eight-year tracking period (National Center for Higher Education Management Systems [NCHEMS], n.d.). This finding suggests that not accounting for student mobility likely leads to an underestimate of student completion rates.

Student mobility also complicates identification of first-time students. Institutions generally rely upon students to tell them whether or not they have been previously enrolled. Students may intentionally or unintentionally misreport that they are attending college for the first time (Perry, n.d.; NCHEMS, n.d.).

(5) The concept of "transfer" in IPEDS is flawed.

Yet another source of inaccuracy in the calculation of completion rates is the flawed methodology for counting students who transfer. Currently, transfers to any institution, including from one two-year school to another two-year school, are factored into the calculation of transfer-out rates. This method is problematic because the important transfer function that community colleges serve is transfer from the community college to a four-year institution, not transfer to another two-year institution. Additionally, community colleges often face difficulty in documenting transfer. Many students transfer to four-year colleges without notifying the community college and without completing a formal transfer program (Bailey, Crosta, and Jenkins, 2006). Another problem is that transfers are treated as secondary outcomes to completion of an associate degree or certificate. The transfer-out rate method requires that transfers are only counted for students who do not complete a formal award. A student who completes a degree or certificate and then transfers to a university can only be counted as a degree completion. Only counting transfer for students who do not complete a credential underestimates the transfer rate.

The Comparison Problem with Graduation and Transfer-Out Rates

National data have the potential to allow for comparisons across institutions and states. To facilitate comparisons, the graduation and transfer-out rate methodology limits the cohorts to full-time, first-time freshmen. As a result it may be possible to make comparisons of those students who have the time, motivation, and resources to attend full-time in their first term of enrollment.

Additionally, a comparison of the completion rates of full-time, fall and summer students could allow for inferences about the completion rates for all students if all institutions exhibited a similar relationship between the rates for full-time students and rates for all students. An analysis of Florida data by researchers at the Community College Research Center (CCRC) found that using different definitions of cohorts, the rank-order of colleges on their graduation rates was fairly consistent (Bailey, Crosta, et al., 2006). This research suggests that, as long as colleges use the same definition of cohorts, college performance in producing graduates relative to other colleges will remain consistent whether the cohort includes only full-time or includes both full- and part-time students.

Unfortunately, however, it is difficult to draw sound conclusions from any comparison of rates for three main reasons.

(1) Different methods for determining which students are degree-seeking are used at different institutions.

The graduation and transfer-out rates are self-reported by institutions. Because the data are self-reported, each element of the definitions has to be interpreted by institutions in order to be implemented and these interpretations may vary across institutions (Bailey, Crosta, et al., 2006). In particular, colleges and systems use different methods to identify degree-seeking students. For example, colleges may identify degree-seeking students based on the behavior of students, such as whether or not a student enrolls in a program that offers a formal award or whether or not a student enrolls in degree- or transfer- applicable coursework. Alternatively, colleges may rely upon students' declaration of intent to earn a degree or certificate to

identify which students are degree-seeking. Cohorts of students based on these different definitions can have different completion rates.[8]

(2) There are differences among institutions in the students served.

As open access institutions, community colleges admit many under prepared students. However, the number of students requiring remedial education varies across different states (Jacobs and Charron, 2006). Additionally, some states emphasize that all students who need remedial education attend a community college whereas other states provide remedial education at two- and four-year institutions. Because underprepared students take longer to complete and are less likely to do so, the differences in the number of students needing remediation across states and the differences in policies that affect the number of remedial students attending community colleges make comparisons of graduation and transfer-out rates across states and institutions inappropriate.

Similarly, institutions may vary in the enrollment of low-income students, who may have insufficient resources to remain enrolled and complete.

(3) Institutional and state policies affect what counts as graduation.

The student outcomes that count as completion can also vary among colleges. For example, institutional policy can affect what courses count toward certificate completion. A series of courses may lead to a certificate at one college but not at another. Because completion of certificates of less than two years counts toward an institution's graduation rate, and because these programs have higher graduation rates, institutions that emphasize short-term credentials in their community colleges will have higher graduation rates than those that do not (Bailey, Calcagno, Jenkins, Leinbach, and Kienzl, 2005). Similarly, as mentioned earlier, some institutions may have counted any certificate completion within the three- or four-year tracking period, even though that period of time may greatly exceed the 150% or 200% time limit for earning a particular certificate.

State policy can also affect completion rates. For example, Florida allows all students to enter a four-year institution with junior standing if they complete an AA at a community college (Wellman, 2002). Consequently, more community college students complete an associate degree and get counted in the graduation rate than in states that encourage students to transfer prior to earning an associate degree or states, such as California, that don't align an associate degree with the requirements to transfer. As another example, state policy can affect the level of preparation of community college students. California only admits the top third of a graduating high school class to its public four-year institutions. Thus, students who would qualify for admission to a public four-year college in other states attend community college in California, which would be expected to lead to higher community college graduation and transfer rates in California.

State and institutional articulation policies may affect the number of students who count as having completed a transfer program. IPEDS allows institutions to count in their graduation rate those students who complete a two-year transfer program and are eligible to enter a four-year college as a junior. However, in many instances, students complete 60 transfer-level units but are not considered to have junior status because they have not taken the required lower-division major prerequisites. Consequently, states and institutions with strong articulation policies may have higher graduation rates than states and institutions with weaker articulation policies. Additionally, because articulation agreements are often complicated and done on an institution-by-institution basis, community colleges may take multiple approaches to determining the number of students who complete a transfer program. To simplify matters, some institutions may not track students who complete transfer programs, while others may count any student who completes 60 transfer-level credits.

Questions about Student Outcomes that Need Answers

Ideally, there are several questions that federal policy makers, state policy makers, institutions, and potential students would like to be able to answer about community college student outcomes. Some of the questions that different stakeholders would like to answer are:

Federal, State, and Institutional Stakeholders (common interests)

- What is the completion rate for community college students?
- How well are students progressing toward completion?
- Is the transfer function working as intended?
- Are the degrees being produced aligned with the needs of the employers?
- What are the relative completion rates for students who attend part-time versus full-time?
- Do minorities have access to college and do they succeed?
- How many remedial students are being served by our community colleges and what are their outcomes?
- Is income a barrier for student access and success?

Federal Stakeholders

- How many degrees are being produced nationally?

State Stakeholders

- How many degrees are being produced in our state?
- How many students who attended public institutions or received state aid earned a degree and stayed within the state?
- Are student outcomes at our state or institution good relative to other states – for similar students in similar circumstances?

Institutional Stakeholders

- What institutional programs or policies can improve student progress and outcomes?
- How does our institutional completion rate compare to other institutions for similar students in similar circumstances?

Individual Stakeholders

- What percentage of students like me returns for a second year and eventually earns a degree?
- What percentage of students like me transfers to a four-year institution?

Answers to these questions could have many implications for state, federal, and institutional policy, and the choices of individual students. For example, if large numbers of community college students move out of state after earning a degree or certificate, policymakers in that state would be wise to consider changes in funding and financial aid policy to provide incentives for students to remain in the state. Additionally, if there are differences in the outcomes of similar community college students in similar circumstances in different states, state and institutional leaders would want to explore different policies and strategies for improving student outcomes.

Although there are many questions that stakeholders would like to answer, practically there are limits to the changes that can be made to IPEDS. The ability of IPEDS to answer questions of interest will be limited by federal, state, and institutional costs, the need to set priorities in choosing measures of student outcomes, political feasibility, and the difficulties caused by the variability in institutional missions, governance structures, and student populations in comparing student outcomes. In light of these limitations, changes to IPEDS should be prioritized on the basis of the purposes that IPEDS should serve.

The first priority is for IPEDS to fulfill the needs of the federal government in its role in higher education. The primary higher education policy activities of the federal government are to support basic research, increase access to opportunity through higher education, and provide data on the national condition of higher education to inform policy (National Commission on Accountability on Higher Education, 2005). Consistent with this role, the data collected on student outcomes should indicate how students in general are faring in higher education and how well institutions are providing access to opportunity for diverse groups of students.

Questions about Student Outcomes that Need Answers

A second priority for IPEDS should be to collect data that states cannot collect themselves. As a national data system, IPEDS could potentially have the capacity to track students across state boundaries, which is a function that state-level systems cannot perform independently.[9] Consequently, a second purpose that IPEDS should serve is to provide data on student outcomes that reflect student mobility. In particular, IPEDS should provide data on completion rates that account for student movement across state boundaries.

The third priority is to collect data that help states and institutions fulfill their roles in higher education, as long as doing so protects students' privacy, does not impose an excessive reporting burden on higher education institutions, and does not hinder states and institutions from doing their own reporting. With the passage of the *Student-Right-to-Know Act*, Congress has made clear that it expects institutions of higher education to report information to consumers on student success to IPEDS. Thus, IPEDS should provide indicators of student outcomes that allow potential students to assess the likelihood of similar students succeeding at different institutions.

Proposals made by Others for Changes to IPEDS Data Collection and Reporting

The flaws in the data currently collected by IPEDS for students in general, and for community college students in particular, have received a good deal of attention. It is, therefore, not surprising that alternative methods have been proposed. Recommendations have ranged from completely replacing the current data collection system to modifying what data are collected. As noted, one change has recently been adopted – to extend the period of time allowed for completion from 150% to 200% of "normal" time-to-completion. While a start, that change does not go nearly far enough in addressing the shortcomings of IPEDS reporting, as evidenced by the range of suggestions made by those who have studied the issue.

Student Unit Record Data

Arguably the most dramatic proposed change to IPEDS is to replace the current system in which aggregate data are reported by individual institutions with a system where student records are collected by the NCES. A federal student unit record data system would have advantages over any form of aggregate reporting and would provide the most complete account of student activity. The primary advantages of a national student unit record system are that it would:

- facilitate common definitions of student outcomes and reduce reliance on self-reporting by institutions, making data more accurate and consistent across institutions
- allow more refined analysis of outcomes by student characteristics
- enable tracking student movement across state lines and of a variety of enrollment patterns such as long-term stop-outs and swirling
- make it possible to measure time to degree and the number of credits earned by students
- potentially allow student records to be matched to other federal data to determine earnings and employment status for the assessment of workforce preparation outcomes of students.

Although individual student records would be reported to the NCES if a unit record data system were implemented, the data would most likely be reported in summary form by NCES to protect the identity of students. Users of the data would most likely work with statistics such as graduation rates that were calculated by NCES. Consequently, for more useful student data to be reported, such as graduation rates that include part-time students, changes to the definitions of graduation, transfer-out, and retention rates would also have to be made in addition to the change in how the data were collected.

Despite the potential utility of a unit record data system, reactions to previous suggestions to create such a system suggest that it is unlikely that IPEDS will be replaced by a unit record system in the near future. NCES investigated the possibility of creating a unit record system, resulting in the publication of a feasibility study in March 2005 (Cunningham and Milam, 2005). Although this study concluded that it would be technically possible to implement a unit record data system, there were several concerns expressed. Chief among the concerns discussed in the report was the risk of failing to keep the data confidential and thus violating student privacy. However, the feasibility report and others (e.g., Adelman, 2007) have argued that the NCES is very capable of protecting student privacy and has done so with the data collected in the national studies of students that the Center conducts.[10] Dennis Jones has called the privacy concern a "red herring" that is used as an excuse by those who oppose the accountability provided by student level data systems (Jones, 2008).

Another concern that the feasibility report addressed is the potential burden to colleges that do not currently submit data to a state or private unit record system (Cunningham and Milam, 2005). For these institutions, the initial set-up costs could be high, particularly for small institutions, though subsequent operations are expected to be less demanding on institutional resources. However, the costs of cleaning the data could also be high (Ewell and Boeke, 2007). Others have also expressed concerns over the potential misuse of the data that are collected.

Politically, the idea of creating a national student data system has been met with resistance. When the Spellings

Proposals made by Others for Changes to IPEDS Data Collection and Reporting

Commission made an overture towards the establishment of such a system in its report, *A Test of Leadership: Charting the Future of U.S. Higher Education*, groups such as the National Association of Independent Colleges and Universities opposed the idea on the grounds of student privacy. Furthermore, the House of Representatives approved legislation preventing the Education Department from building a unit record system (Fischer, 2006).

Some of the individuals interviewed for this report said that while development of a unit record data system is not likely to happen in the near term, such a system may be developed in the more distant future. Several factors could improve the long-term prospects for the creation of such a system. First, increased clarity on federal regulation of student privacy, such as the changes proposed in March 2008 to the Family Educational Rights and Privacy Act (FERPA; Federal Register, 2008) could ease concerns over compliance with FERPA. Second, technological progress could make the implementation of a unit record system less costly and more secure. Third, work being done by individual states and multi-state partnerships[11] in creating unit record data systems could pave the way for the establishment of a national system by demonstrating the feasibility and usefulness of a national unit record system. Finally, because a unit record system would allow many questions that are important to policy makers to be answered, policy makers may ultimately recognize that it is preferable to the current system of aggregate reporting. As Dennis Jones concludes, it is a matter of increasing demand for this kind of information, since technical, cost, and privacy barriers are easily overcome (Jones, 2008).

In the short term, until the formation of a national unit record system, there is nevertheless substantial room for improvement of the current aggregate reporting.

Changes to IPEDS Aggregate Reporting

A more realistic shorter-term solution to the problems with the IPEDS measures of student outcomes is to modify the current aggregate IPEDS reporting to get a more accurate picture of student success in community colleges. While modifications would be an improvement, aggregate data cannot answer some of the important policy questions. For example, aggregate reporting would not provide detailed information on enrollment patterns. Additionally, although definitions for the calculation of student outcomes could be improved, it is likely that some variation in how the definitions are put into practice by individual states or institutions would remain. Furthermore, a lack of student records at the national level could hinder the assessment of workforce contributions of community colleges because students could not be matched to federal data on employment and income. Lastly, the detail of the data that could be reported would be limited because increasing levels of detail would lead to increasingly higher reporting burdens placed on individual institutions. Additional demands for reporting could stretch state and institutional resources and lead to a degradation in the quality of the data that are reported.

Although less informative than a unit record system, changes to the current self-reported aggregate data could make the IPEDS measures on student outcomes substantially more useful. In our research for this report, we identified many useful recommendations that others have made for improving the current system.

(1) Better identify first-time students

Currently, many colleges ask students to self-identify as to whether or not they are first-time students. Some students may not report previous enrollments, leading to the inaccurate identification of first-time status (Perry, n.d.). The accuracy of the identification of first-time students could be increased by encouraging states and institutions to use available national databases such as the National Student Clearinghouse to determine if a student has previously enrolled at any institution.[12]

(2) Count students who enter over the course of a full year

Cohorts of new students should include students who enter over the course of a full year rather than just in the summer and fall enrollment periods. This would increase the number of community college students whose outcomes are tracked for the purpose of calculating completion rates (Adelman, 2007).

Proposals made by Others for Changes to IPEDS Data Collection and Reporting

Tracking students who enter over the course of a full year does complicate the reporting of outcomes because students admitted after the fall term will be tracked for a shorter period. However, the benefits of including more students in the cohort outweigh the negative aspects of the slightly unequal tracking periods if the tracking period is sufficiently long.

(3) Include both part-time and full-time students in the completion rates

The IPEDS graduation and transfer-out rates have been repeatedly criticized for not including students who enter attending part-time. Not including part-time students is particularly problematic for community colleges because many students begin on a part-time basis.

(4) Use a consistent, behavioral standard for defining degree-seeking students

Currently community colleges use a variety of methods, including student self-report and behavioral measures, to identify which students are seeking a degree or certificate. While both self-report and behavioral measures have disadvantages (as discussed earlier), a behavioral definition of degree-seeking could be consistently applied across all institutions to make completion rates more comparable.

A wide range of behavioral standards has been proposed including enrollment in one degree-applicable course, completion of 12 non-remedial units, enrollment in specific courses such as math or English, or some combination of the above. Some argue for the use of a higher threshold (e.g., completion of 12 or more units), in order to be sure to exclude incidental students. Others argue that a lower threshold (e.g., enrollment in a single course) should be used because students who are excluded under more stringent definitions are potential degree and certificate earners. Both arguments make important points. Clearly the goal is to include as many degree-seeking students as possible while excluding those students seeking a course or two to upgrade their job skills or those attending solely for personal enrichment. The best option might be a combination of a relatively low unit enrollment threshold in conjunction with enrollment in a course that by and large only degree-seeking students would take, e.g., beginning college English or math.

Using a behavioral standard does present some difficulties. First, it would require a change in the current practice by which institutions are expected to identify degree-seekers when students first enroll. Now, when institutions report graduation rates, they are to use the same cohort submitted in the enrollment survey and cannot change it without explanation. This method precludes the possibility of using behavior from multiple terms as a means of identifying degree-seeking students. This problem could be resolved by allowing institutions to identify or refine which students they track when they report the numbers of graduates and transfers. A second issue is that more complicated behavioral standards that require looking at student enrollments over multiple terms will increase the reporting burden on colleges. The cost of the increased burden, however, needs to be weighed against the benefits of more accurately identifying which students are seeking a degree.

(5) Extend the period of time allowed for completion

Extending the time allowed for completion gives sufficient time for students who enroll part time, either consistently or periodically during their period of attendance, to complete a degree. Similarly, extending the time horizon would permit enough time for underprepared students to complete their developmental coursework and complete a program of study. Extending the time-to-completion period could also make completion rates more comparable for institutions that have different proportions of part-time students or developmental students because the longer time would allow more of these students to complete. Time periods of up to 10 years have been suggested for measuring completion at community colleges (Adelman, 2007; Perry, n.d.).

(6) Use available national data to track more students across institutions and states

Many students change institutions and some attend institutions in multiple states, particularly at institutions near state borders. Consequently, a more accurate accounting of student completion could be made if states or institutions used available state databases or the National Student Clearinghouse to identify students who enrolled elsewhere and completed. Adelman (2007) points to the Consortium for Student Retention Data Exchange, state higher education system offices, and interstate compacts

as potential sources of data for tracking student completion across institutions and states. He suggests tracking these students as a separate cohort.

(7) Change how transfers are counted

To improve the measure of transfer, community colleges should only count transfers to four-year institutions, use the National Student Clearinghouse to identify which students have transferred, and change the calculation of transfer-out rates so that transfers are not limited to non-completers. Two suggestions for giving equal priority to completion and transfer are to either compute a single completion rate that combines transfer and associate degree earners, or to calculate separate transfer and completion rates but allow students to be counted in each category (Perry, n.d.).

(8) Report on sub-groups of students

There are groups of students that deserve special attention because their pathway through college is likely to be considerably different from more traditional students and because serving them is a special focus of community colleges. Consequently, the success of these groups should be measured separately. Adelman (2007) argues that one important distinction to make is between younger (under age 24) and older students. Another important group to track separately is students in need of remediation (Perry, n.d.). Ideally, data on low-income students would also be reported separately. However, many community colleges do not have income data on their students. A reasonable proxy is Pell Grant status, but its usefulness as a measure of income is dependent on students submitting a Free Application for Federal Student Aid (FAFSA) and many community college students do not do this (Zumeta and Frankle, 2007).

Conclusions and Recommendations

Our recommendations for using IPEDS to better understand community college outcomes fall into two categories: (1) improving the type and quality of the data collected to improve the measurement of student outcomes and (2) making better and more appropriate use of the data that are currently collected. Recommendations in each category are detailed below. They are not mutually exclusive, as efforts could proceed immediately to make better use of available data while longer-term plans proceed to improve data collection. The recommendations and the problems they attempt to address are summarized in Table 3.

Recommended Changes to IPEDS Data

Ideally, revisions to IPEDS would allow for meaningful answers to all of the questions that should be answered with a national data system. Practically, there are limits to the changes that can be made which, in turn, place limits on the capability of a redesigned data system to answer important policy questions. In particular, it is unlikely that a unit record system will replace the current IPEDS system anytime in the near future. Without a national unit record data system, many questions, such as those requiring detailed data on attendance at institutions in multiple states, are not answerable at a national level.

As an alternative to creating a unit record data system, changes to the aggregate reporting for IPEDS should be considered. The following six recommended changes would vastly improve upon the usefulness of collected data and allow more questions to be addressed.

(1) Use a behavioral measure of degree-seeking that is applied consistently across colleges

Current methods of identifying degree-seeking students vary across institutions and include behavioral measures such as enrollment in college-level coursework (however defined), enrollments in degree programs (at colleges that formally enroll students in degree programs), and self-reported measures of intentions. This variety makes comparisons of graduation rates across institutions and states nearly meaningless. To improve the measures of graduation and transfer-out rates, a criterion such as enrollment in more than six credits in the first year and enrolling in one math or English class, either college level or developmental, in the first two years should be adopted. In adopting a behavioral standard that requires multiple terms to have passed, the IPEDS data collection system should allow for the GRS cohort to be determined either the first year that outcomes data are submitted or provide for an easy method to revise initial cohorts.

(2) Include part-time and students who enroll during the full calendar year in the calculation of graduation and transfer-out rates

First-year, full-time students who enroll during the summer or fall semester represent a small subset of all the students attending community colleges who intend to complete a degree, certificate, or transfer to a university. Without including more students in the outcome measures, a meaningful assessment of student success cannot be made.

(3) Track completion over a longer period of time

Although time to degree is important to consider, equating completion in excess of three years with not completing at all is unreasonable. It is equally important to know the percentage of students who complete at some point (or at different points) and the percentage of students who complete in a "normal" period of time. Consequently, it is recommended that community college completion is assessed after a longer period of time (e.g., six years). Two-, three-, and four-year completion rates should still be reported but these would be augmented by a longer time period rate.

(4) States and institutions should make greater use of available national databases to identify first-time students and track student transfers and enrollments at other institutions

The National Student Clearinghouse could be used to identify students who are first-time and to identify students who transfer to four-year schools. Although these databases have some limitations in comparison to what a national student record system would be capable of (e.g., not all institutions are included and the National Student Clearinghouse includes non-degree seeking students [NCHEMS, n.d.]), their use would improve IPEDS reporting.

Conclusions and Recommendations

Table 3
Problems with IPEDS Student Outcome Rates and Recommendations

Problems with IPEDS Student Outcome Rates	Recommendations
Measurement Problems	
Unclear student goals complicate the assessment of meaningful outcomes for students.	Use a behavioral measure of degree-seeking that can be applied consistently across colleges.
Many students are excluded.	Include part-time and students who enroll in the full calendar year in the calculation of graduation and transfer-out rates.
Time allowed for completion is unrealistic.	Track completion for a longer period of time (e.g., 6 years) in addition to the current time periods.
Student mobility is not captured.	States and institutions should make greater use of the National Student Clearinghouse to identify first-time students and track student transfers and enrollments at other institutions.
The concept of "transfer" in IPEDS is flawed.	Only count transfer to four-year institutions as transfers. Use the National Student Clearinghouse to track transfers to four-year institutions. Report a single completion rate that includes students who completed a certificate, an associate degree, or who transferred to a four-year college. Also report the percentage of degree-seekers who completed each.
Comparison Problems	
Different methods for determining which students are degree-seeking are used at different institutions.	Use a behavioral measure of degree-seeking that can be applied consistently across colleges.
Differences among institutions in the students served make for invalid comparison.	Calculate separate completion rates for remedial and non-remedial students, for younger and older students, and for low-income students.
The effects of institutional and state policy on what counts as completion are not captured.	Use data appropriately - conclusions drawn from comparisons of rates should be made in consideration of the variation in state and institutional policies and the students who attend different community colleges.

Conclusions and Recommendations

Some argue that not all states or institutions have the resources to match students to national databases. However, the National Student Clearinghouse charges from 5 cents to 10 cents per student to match data, depending on the degree of institutional participation in the clearinghouse[13] - a cost that does not seem prohibitive.

(5) Improve how the transfer and graduation rates are calculated

We identified three major problems with the current definition and reporting of transfer and graduation rates. One should be easy to solve: transfers *between* two-year institutions should not be included, in order to keep the focus on the important two-year to four-year transfer function of community colleges. A second problem – that transfers are only counted for students who fail to earn certificates or degrees prior to transfer – can be remedied with a new set of completion measures. We recommend that there be:

- an overall *completion rate* defined as the percentage of degree-seekers who earn a certificate, and/or an associate degree, and/or who transfer – with each student counted only once, and
- three individual completion rates, indicating the percentage of the degree-seeker cohort who (1) earn a certificate, (2) earn an associate degree, or (3) transfer – for which each student can be counted multiple times if multiple outcomes are attained.

A third problem – lumping certificate and associate degree-seeking students into a single cohort obscures important differences across states – is more difficult to correct. Ideally, we would want to report a certificate completion rate separate from an associate degree completion rate separate from a transfer rate. However, as discussed earlier, reliably distinguishing among students' goals to that specific extent (i.e., who is seeking a certificate but not an associate degree) is not possible. Having one overall completion rate augmented by information about the breakdown of those completions by the three outcomes, is the best available alternative.

(6) Calculate and report separate completion rates for remedial and non-remedial students, for younger and older students, and for low-income students

Asking institutions and state systems to identify and report success rates separately for students who are in need of remediation, for low- income students, and for students who are younger or older will probably be perceived as an excessive reporting burden by some institutions. However, it should not be difficult for institutions to report success rates for younger and older students because institutions should have this data readily available. There may be greater difficulty in identifying which students need remediation because not all students who attend community colleges are assessed and standards of college-level coursework are inconsistent. Identifying income level may be difficult because some colleges do not collect this information.[14]

Despite these potential difficulties, tracking these groups separately is important for understanding how community colleges are doing at fulfilling their mission to provide remedial education and serve non-traditional students. For example, separating remedial from non-remedial students has the added advantage of making completion rates more comparable across institutions because remedial students are less likely to complete and the proportion of renedial students varies across institutions. Furthermore, the information may be helpful for informing potential students about their likelihood of success.

Although this recommendation for reporting completion rates for separate groups would impose a greater reporting burden or present practical difficulties, information on the outcomes for these groups of students would be very useful in understanding community college student outcomes. It would also spur improvement in policies and practices, e.g., insuring that more students are assessed.

Conclusions and Recommendations

Recommendation for Using IPEDS Data Appropriately

Making the changes recommended above would improve the data collected by IPEDS and allow more questions about community college student outcomes to be addressed. However, even with improved data, caution should be used in drawing broad conclusions about comparative performance across institutions or states. The IPEDS data make it all too easy to make comparisons on student outcome measures and draw conclusions that ignore substantive differences across states and institutions that may invalidate such conclusions. State and institutional policies influence the types of students that enroll in community colleges and the kinds of educational activities they pursue, and these in turn affect completion rates. For example:

- State policies may limit access to universities, expanding enrollment in community colleges of students who may be better-prepared and more likely to succeed. California's policy to limit access to its public universities to the top one-third of high school graduates means that many students begin work toward a baccalaureate in the state's community colleges rather than enrolling directly in a university as they might in states with more open-access universities.
- Low tuition policies can result in more enrollment by students who are just "testing the waters" in college, lowering the completion rates of those states and institutions compared to places where cost is a greater barrier to attendance.
- States and institutions offering or emphasizing certificates requiring fewer units to complete may have higher graduation rates compared to places where only certificates requiring more units to complete are offered.
- State policies requiring or encouraging students to complete an associate degree before transferring to a university may have higher graduation rates relative to states that do not make the associate degree an explicit part of their transfer system.
- States that allow students to transfer to a university with a low number of units may have higher transfer rates than states that require students to complete all lower-division requirements before being admitted.
- States and institutions may serve different numbers of low-income students who may have difficulty staying enrolled and completing.

The impact of state and institutional policies complicate efforts to draw conclusions about relative community college performance based on completion rates. While the recommendations provided in this report would bring greater standardization to the outcome measures, it would still be important to consider the policy environment when drawing conclusions about the relative performance of states and institutions.

Despite these limitations, the recommended changes to IPEDS would improve our understanding of community college student outcomes. With the proposed changes, outcomes would be tracked for more students over a longer time period, identification of degree-seeking students would be more consistent across institutions, more meaningful transfer rates would be reported, and data would be available to monitor the outcomes of groups of students whose success is increasingly recognized as critical to the country's social and economic health.

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Endnotes

[1] Beginning 2008-2009, institutions will report students who complete within 100%, 150%, and 200% of normal time to completion.

[2] Comparisons across colleges are still problematic, as discussed below.

[3] Based on the authors calculations with the NCES Data Analysis System using the BPS: 04/06 data set. The variable used to identify full-time, fall or summer degree seekers was FALLDGFT.

[4] Based on the authors' calculations with the NCES Data Analysis System using the BPS: 04/06 data set. Degree-seeking students are students who said they were working on a certificate, associate, or bachelor's degree.

[5] http://nces.ed.gov/IPEDS/news_room/ana_Changes_to_8_22_2008_188.asp

[6] Based on the authors' calculations with the Data Analysis System using the BPS: 04/06 data set. Degree-seeking students are students who reported they were working on a certificate, associate, or bachelor's degree.

[7] However, the degree to which student outcomes are undercounted because of student mobility may vary across states. In states where IPEDS data are reported by the community college system, students may be tracked across multiple colleges within the system.

[8] For an example of transfer rates under varying cohort definitions in California see Horn, L., and Lew, S. (2007). *California Community College Transfer Rates: Who is Counted Makes a Difference*. MPR Associates Inc.

[9] The National Student Clearinghouse does include student enrollment nationally but the database does not include all institutions and can only indicate whether or not a student is enrolled, not whether or not the student was successful.

[10] For example, the Beginning Postsecondary Students Longitudinal Study (BPS), National Postsecondary Student Aid Study (NPSAS), and National Education Longitudinal Study of 1988 (NELS:88).

[11] For example, see NCHEMS Multi-State Data Exchange Project. http://www.nchems.org/c2sp/

[12] There may be other national, as well as multi-state, or state databases that would also aid tracking students across institutions. However, the remainder of the report will only refer to the National Student Clearinghouse as a source of multi-institutional enrollment because of the large number of institutions that participate.

[13] See http://www.studentclearinghouse.org/colleges/Tracker/faqs.htm for further details.

[14] Recently, colleges were asked to report graduation rates for students receiving Pell Grants, which are given to low income students. Pell Grant status is, however, an imperfect measure of income because while Pell Grant recipients are lower income students, not all lower income students apply for Pell Grants.

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