Achieving the Dream
Community Colleges Count

TIME TO COMPLETION

TAKING THE NEXT STEP

THE PROMISE OF INTERMEDIATE MEASURES FOR MEETING POSTSECONDARY COMPLETION GOALS

By Jeremy Offenstein and Nancy Shulock

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Institute for Higher Education Leadership & Policy

JOBS FOR THE FUTURE

Achieving the Dream
Community Colleges Count

Achieving the Dream: Community Colleges Count is a national nonprofit that helps more community college students succeed, particularly students of color and low-income students. The organization works on multiple fronts—including efforts on campuses and in research, public engagement and public policy—and emphasizes the use of data to drive change. Launched as an initiative in 2004 with funding provided by Lumina Foundation for Education, *Achieving the Dream* is built on the belief that broad institutional change, informed by student achievement data, is critical to significantly improving student success rates. Today, *Achieving the Dream*'s network includes 130 institutions in 24 states and the District of Columbia, reaching more than one million students. *Achieving the Dream* continues to work closely with founding partners: the American Association of Community Colleges (AACC); the Community College Leadership Program at the University of Texas-Austin (CCLP); the Community College Research Center, Teachers College, Columbia University (CCRC); Jobs for the Future (JFF); MDC; MDRC; and Public Agenda.

JOBS FOR THE FUTURE

Jobs for the Future develops, implements, and promotes new education and workforce strategies that help communities, states, and the nation compete in a global economy. In 200 communities in 41 states, JFF improves the pathways leading from high school to college to family-sustaining careers. JFF coordinates the effort to improve policies in 16 *Achieving the Dream* states and co-leads the national policy effort.

TIME TO COMPLETION

Many barriers that extend students' time to completion can be addressed through improvements in policy and practice. States, systems, and institutions have begun to experiment with new ideas that hold real promise for promoting timely completion. Building on those experiments, Jobs for the Future's *Time to Completion* project has two goals: expanding what we know about time to completion through research and analysis; and advocating for policies and practices leading to more timely completion for a greater number of students. *Time to Completion* is funded by Lumina Foundation for Education, which is committed to ensuring that 60 percent of Americans are college educated by 2025.

Institute for Higher Education Leadership & Policy

The Institute for Higher Education Leadership & Policy at Sacramento State produces research and services for policymakers, practitioners, and educators to enhance leadership and policy for higher education in California and the nation.

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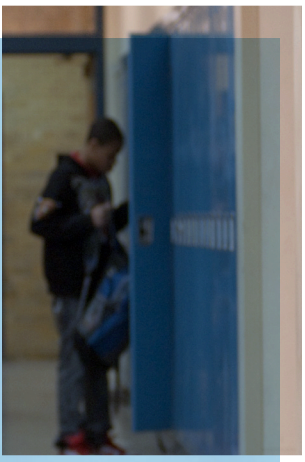
OVERVIEW

As educators, government officials, and foundation leaders have embraced the agenda of dramatically increasing college success and credential completion, they have come to understand the need for better data on student outcomes to guide the improvement efforts of institutions, systems, and states. The data on degree completion and other final outcomes are too little, too late if the ultimate goal is improving rather than just reporting outcomes.

What is needed are good comparative data on intermediate steps along the way to completion that are associated with earning degrees. Such measures are likely to include basic skills acquisition and the completion of a specific number of credits or particular gateway courses. In *Taking the Next Step*, Jeremy Offenstein and Nancy Shulock assess the state of the emerging field of defining, measuring, reporting, and rewarding student progress in achieving "intermediate measures of success."

Taking the Next Step distinguishes between *milestones* that must be attained in order to get to completion and *success indicators* that increase a student's chances of completion. The authors review 11 cases of the use of intermediate measures by multistate, single-state or single-system, and multi-institution initiatives, noting differences in approaches, definitions, and uses of "milestones" data.

Taking the Next Step concludes with clear advice for the "next generation" of efforts to collect and report data on intermediate measures. The goal is to encourage common practices and definitions, as well as more thoughtful and effective uses of these data for institutional improvement, policy reform, performance funding, and accountability purposes.



BETTER DATA FOR A MORE COMPETITIVE FUTURE

THIS REPORT EXAMINES THE CONCEPT OF MILESTONES, EXPLORES THE WAYS THEY ARE BEING USED, AND CONSIDERS HOW THEY CAN BE USED MOST EFFECTIVELY.

Increasing postsecondary attainment is an urgent national priority for ensuring long-term economic growth and prosperity. Most states are struggling to educate younger generations in order to fill the growing number of jobs that require educational credentialing beyond high school. More and more nations are surpassing the United States in the proportions of their populations with college degrees. Following several years of substantial investment by some of the nation's major philanthropic foundations, President Barack Obama has elevated the issue toward the top of the national agenda, calling for the United States to once again lead the world in postsecondary education levels.

Educators, government officials, and foundations have begun to recognize that better data are essential to the strategy for meeting this challenge. The current means of measuring and accounting for outcomes in community and technical colleges and four-year institutions are deficient. Among the weaknesses is a lack of data to help postsecondary systems and institutions learn how to improve student outcomes by changing their interactions with students or redesigning program and service delivery. Knowing that far too few students complete their college education is not enough: we need to know where and why they get hung up in order to take appropriate steps.

An emerging strategy for using data to improve postsecondary outcomes is to measure the patterns by which students reach and move through intermediate stages—often called "milestones"—as they progress toward completing degrees or other postsecondary credentials. These approaches also track students' academic behaviors and link them to the achievement of milestones as a basis for examining which groups of students are (or are not) exhibiting behaviors that increase one's chance of succeeding. The promise of this approach is not only does it show where students stop progressing, but it also suggests why they have stopped and can help institutions identify how to improve student progress.

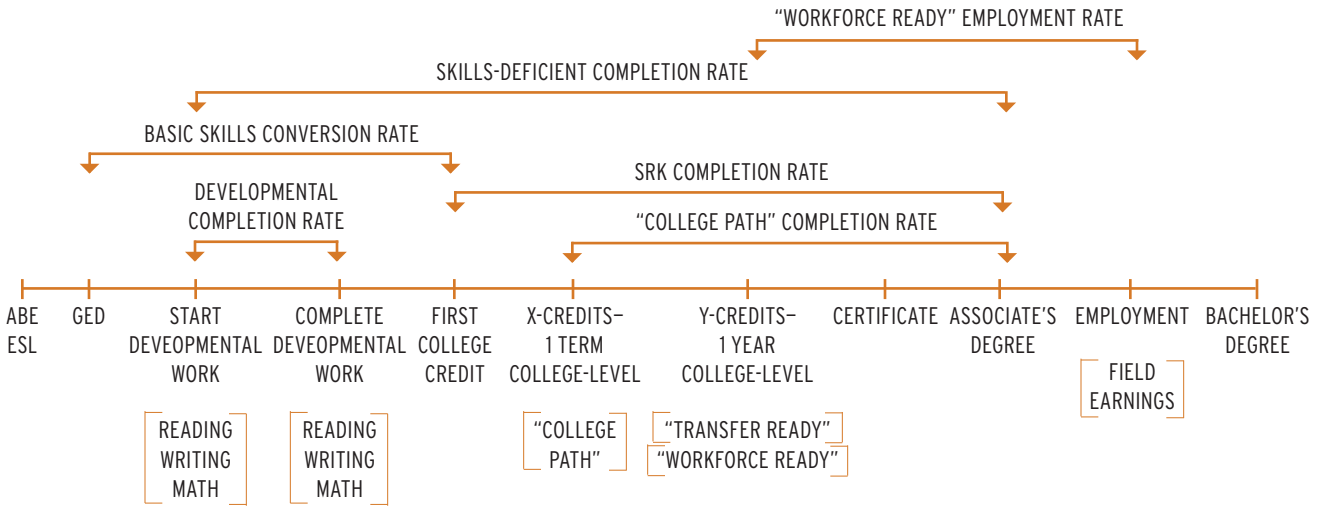
Obtaining better data to support student success strategies is of particular value to community colleges because, compared to four-year institutions, they serve students with more risk factors for dropping out and with a more varied set of academic needs and goals. Traditional measures—retention and graduation—ignore the public value provided by community colleges when they help students earn GEDs, achieve basic literacy, or attain skills that are valued in the workplace (Morris et al. 2005). Intermediate milestones, in addition to improving graduation rates, provide a means for two-year institutions to document and improve valuable student achievements short of completion.

Although the milestone concept appeared only recently, a number of states and postsecondary institutions are applying it, some on their own and some in partnerships. Several of these initiatives are under development as the parties involved refine their metrics. New instances of milestone use are sure to follow soon as demand for higher graduation rates builds. As the milestone concept develops and expands, it is critical that these efforts be well-conceived from the outset. Once reporting systems are in place and institutions gear up to provide a set of metrics to system offices, governors, or state legislatures, it will be difficult to refine the approaches. In the interest of providing timely guidance, this report examines the concept of milestones, explores the ways they are being used, and considers how they can be used most effectively.

CONCEPTUAL FRAMEWORKS

In 2006, Peter Ewell, as part of a partnership among states participating in the Ford Foundation *Bridges to Opportunity* and the Lumina Foundation for Education-funded *Achieving the Dream* initiatives, provided the conceptual basis for reporting intermediate measures with a continuum for tracking students from pre-college coursework to college completion (Ewell 2006). Along the continuum are several "milestone events" through which students progress en route to completing a Bachelor's degree. Superimposed on the milestone events are several key measures of intermediate progress, such as the developmental completion rate (the share of students who start developmental work and complete it) and the "college path" completion rate (the share of students who complete a term of college-level work and end up completing an Associate's degree).

FIGURE 1. "MILESTONE EVENTS" IN A STUDENT ENROLLMENT PATHWAY



Building on Ewell's framework, the Community College Research Center published a research tool for applying a milestone framework to data from the Washington State Board for Community and Technical Colleges (Leinbach & Jenkins 2008). This research groups intermediate measures into two types: milestones and momentum points.

Milestones are measurable educational achievements that vary by students' levels of preparation and goals. In this framework, the milestones identified are:

- Completion of pre-collegiate coursework;
- Transition into college-level coursework;
- Transfer to a four-year university; and
- Completion of an educational program or apprenticeship.

Momentum points are measurable educational attainments that predict completion of a milestone. In other words, students who attain momentum points are more likely to achieve the milestones than students who do not. The momentum points identified are:

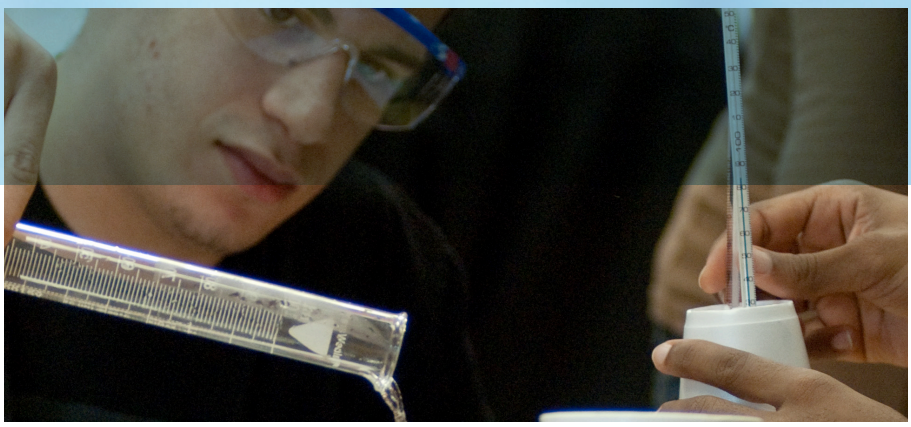
- Completion of one pre-collegiate course;
- Completion of a career exploration or introduction course;
- Completion of one college-level gatekeeper math course;
- Completion of a college-level gatekeeper English course;
- Completion of 15 college-level credits;
- Completion of 30 college-level credits;
- Completion of 30 college-level credits in one year;
- Completion of 15 vocational credits;
- Completion of 30 vocational credits; and
- Completion of 30 vocational credits in one year.

Using this framework, the researchers tracked the number of students who completed each of the milestones for different enrollment groups, such as students starting at pre-collegiate levels, college-level students, and workforce training students. The analysis shows that students who attain the momentum points are more likely to complete a milestone.

Steps to Success, a research report by the Institute for Higher Education Leadership & Policy (IHELP), applies a similar framework to data from the California Community College system (Moore, Shulock, & Offenstein 2009). Like the Community College Research Center study, this report classifies measures into two types: intermediate achievements, also referred to as "milestones," and measurable academic behaviors that predict completion, referred to as "success indicators." The success indicators include a variety of measures drawn from the student success literature, such as:

- Completing a specific number of credits in a specified period of time;
- Completing gateway courses in a specified period of time;
- Completing a student success course;
- Earning summer credits;
- Enrolling continuously; and
- Avoiding excessive course withdrawal and late registration for classes.

The IHELP report shows that students who engaged in these behaviors were more likely to complete a degree, certificate, or transfer. It also illustrates how additional analysis of the success indicators could point to possible changes in policy and practice that would improve student outcomes. A subsequent joint publication by IHELP and the Education Trust, *Advancing by Degrees*, applied the same framework to the State University System of Florida and the California Community Colleges to demonstrate the utility of the framework for four-year as well as two-year institutions (Offenstein, Moore, & Shulock 2010).



An issue brief by the National Governors Association argues that state accountability systems should measure milestone achievement in addition to graduation rates; a sole focus on graduation rates creates an incentive for institutions to enroll students most likely to succeed and to underserve students from disadvantaged backgrounds (Bearer-Friend 2009). The NGA brief also notes that by providing more information about where students tend to get stalled, tracking milestones helps policymakers learn how they might improve student outcomes. It focuses on three types of milestones: remediation milestones, retention milestones, and attainment milestones. The report suggests that states track remediation milestones that predict eventual degree completion. It also identifies pass rates in remedial and core courses and advancement from remedial to college-level courses as key milestones. The key retention milestone identified is transfer from a two-year to a four-year institution, but the report recommends tracking semester-to-semester retention, full-time enrollment, and continuous enrollment. For attainment milestones, it recommends tracking attainment of certificates and Associate's and Bachelor's degrees—and disaggregating performance on these measures by institution and by several student subpopulations:

- Part-time and full-time students;
- Transfer students;
- Students beginning in remedial courses;
- Students with limited English proficiency;
- Pell-eligible students;
- Underrepresented ethnic minorities;
- Students in science, technology, engineering, and mathematics (STEM) fields;
- Students above age 21 when first enrolled; and
- Students with disabilities.

As these frameworks have influenced the implementation of the milestone concept across the country, it is instructive to see how they compare conceptually, before taking a look at the actual applications of milestones by institutions and states.

TWO TYPES OF MEASURES

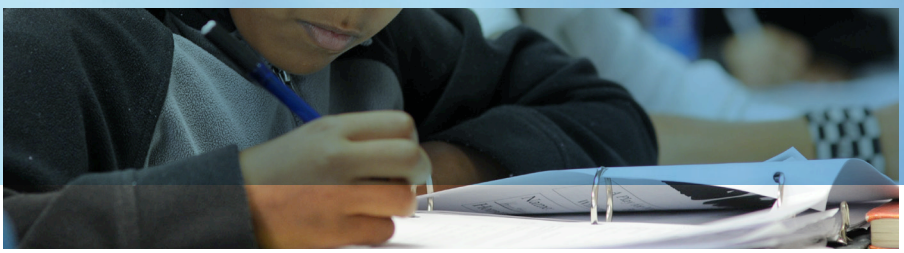
The frameworks profiled above suggest a wide variety of measures, reflecting different priorities and interests. Moreover, they describe two qualitatively different types of measures, although the frameworks themselves do not always make the distinction. One type is the set of intermediate points that students must reach if they are going to complete a program or degree. These include achievements like completing a college-level math course *and* 15 college-level units. These necessary achievements differ depending on a student's goal and starting point. For example, transfer is a necessary achievement for a baccalaureate-seeking student who begins at a community college, but not for a student who begins at a university or for a community college student who seeks a workplace certificate. However, for all students with a similar program goal, the necessary achievements are the same and must be attained for successful completion of the program.

The second type of intermediate measure tracks academic behaviors that increase a student's chances of completion but that are not strictly required in order to finish an academic program. Academic behaviors that have been shown to correlate with success and that fall into this category of measure include completing college math within the first two years, enrolling in a summer session, and minimizing late registration and course withdrawals. Again, these can vary for different types of students. For example, completing a college-level math course within a set number of terms may be more important in increasing chances of success for younger students than for older students (Calcagno et al. 2007).

INCONSISTENT USE OF MILESTONE TERMINOLOGY

While the frameworks use the term "milestones," there are inconsistencies among them in how the term is used, and in how they treat the second type of measure: those that correlate with or predict success but are not strictly required for success.

The Community College Research Center separates student outcomes that are recognizable academic achievements from those that predict those achievements, calling the former "milestones" and the latter "momentum points." However, CCRC includes as milestones some measures that fall into the "correlates of success" category because they have a time dimension. As an example, completing a college-level math course within one year is classified as a milestone by CCRC, but a student could delay college-level math to the second year or beyond and still complete a degree. Conversely, CCRC classifies completion of 15 or 30 credits as a momentum point because it predicts the completion of milestones—even though this is a necessary achievement on the road to degree completion.



MILESTONES: SPECIFIC EDUCATIONAL ACHIEVEMENTS THAT STUDENTS MUST ACCOMPLISH TO GET FROM THEIR BEGINNING POINT TO COMPLETION OF AN EDUCATIONAL PROGRAM, AS WELL AS THOSE ACHIEVEMENTS THAT MARK THE END OF THE EDUCATIONAL PROGRAM.

SUCCESS INDICATORS: ACADEMIC BEHAVIORS THAT INCREASE A STUDENT'S CHANCES OF COMPLETION BUT ARE NOT STRICTLY REQUIRED IN ORDER TO FINISH AN ACADEMIC PROGRAM.

IHELP's *Steps to Success* framework uses "milestones" narrowly to refer to necessary intermediate educational achievements. It uses the term "success indicators" for academic behaviors that predict success but are not strictly required in order to succeed. At the other extreme, the NGA report uses the term "milestone" in reference to both kinds of measures without attempting to make a distinction. Included among their milestones are measures of academic behaviors that correlate with success but are not strictly required in order to succeed (e.g., continuous enrollment, advancement from part-time to full-time status).

This paper uses the terms "milestone" and "success indicator" to differentiate between the two types of measures.

THE IMPORTANCE OF DISAGGREGATING DATA

Despite these differences, all of the frameworks highlighted above emphasize the importance of disaggregating data by sub-populations of students. The CCRC report emphasizes disaggregating the data and tailoring the intermediate measures for different groups based on whether their goal is obtaining a vocational credential or transferring. The National Governors Association recommends reporting milestone achievements for students in STEM fields. Multiple reports recommend disaggregating by student demographic groups, level of preparation, and whether students attend part time or full time. Disaggregating by level of preparation is particularly important given the difficulty that poorly prepared students have completing developmental education and entering and succeeding in college-level coursework.

INTERMEDIATE MEASURES IN ACTION

The use of data to examine student and institutional outcomes is certainly not new. Institutional researchers have been engaged in such analyses for decades. What is new is the conscientious application of milestone analysis to improve ultimate outcomes—and the scale of several initiatives that engage numerous states and/or postsecondary systems in data-rich efforts to change institutions and public policies.

Here we review 11 cases of milestone application that are of significant scale, as judged both by the number of participants and the potential to influence public policy. Some of these are major, multistate initiatives that arguably have the greatest opportunity to influence the practice of using intermediate measures. Some are limited to one state or postsecondary system; others involve groups of institutions, either within a state or across states. All are furthering the national dialogue about the use of intermediate measures to improve postsecondary outcomes across institutions, systems, and states in the interest of enhancing students' social and economic prospects.

In every case, intermediate measures—whether proposed or in place—go well beyond the traditional measures of retention, transfer, and graduation. We describe each case and summarize its key features with respect to: the types of measures used; the unit of analysis; and the principal uses for the data.

MULTISTATE INITIATIVES

ACHIEVING THE DREAM CROSS-STATE DATA WORK GROUP

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts (disaggregated by student characteristics)
PRINCIPAL USES FOR DATA	Institutional improvement; state and system policy reform

Achieving the Dream (ATD) is the first initiative to apply the milestone concept to improving policy, practice, and outcomes in community colleges across the country. ATD's Cross-State Data Work Group began with participation by postsecondary systems from Connecticut, Florida, North Carolina, Ohio, Texas, and Virginia, and is coordinated by Jobs for the Future (Brown 2009).

The effort focused initially on developing a more accurate set of completion measures (e.g., part-time students) that would be an alternative to what was available in the Integrated Postsecondary Education Data System (IPEDS) for use in community college accountability reporting. Subsequently, the work group moved on to developing intermediate benchmarks that provide additional information for improving student outcomes. Participants have benefitted tremendously from the collaborative process of developing and applying the measures of student and system performance—particularly in view of the work group's interest in the effects of state policy on student outcomes. For example, degree completion rates are considerably higher in Florida, where students who complete an Associate's degree are granted admission to a university, than they are in Texas, where there is less incentive for students to complete an Associate's degree before transferring (Jobs for the Future 2008).

The measures developed by the Cross-State Work Group are also being used in the *Developmental Education Initiative* funded by the Bill & Melinda Gates Foundation. This three-year effort, begun in 2009, is identifying and creating programs that increase the number of community college students who complete preparatory classes and advance to college-level studies. With a focus on policy and practice spanning institutional, system, and state levels, *Achieving the Dream* and the *Developmental Education Initiative* are the nation's most comprehensive data-driven community college reform efforts.

ACCESS TO SUCCESS INITIATIVE

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts (disaggregated by student characteristics)
PRINCIPAL USES FOR DATA	Institutional improvement; system policy reform

Another effort to use intermediate measures of student outcomes and academic behaviors involves a group of postsecondary systems participating in the *Access to Success Initiative* spearheaded by the National Association of System Heads (NASH) and The Education Trust. *Access to Success* brings together 24 public higher education systems that have pledged to cut the college-going and graduation gaps for low-income and minority students in half by 2015. The initiative aims to build capacity at the system level to lead change efforts and stimulate institutional improvement through data-driven changes to system policy and practice.

The initiative has developed a baseline report of access and success metrics for two-year and four-year institutions. The metrics focus on "leading indicators" that correlate with student success (what this report calls success indicators). Although the effort is in the early stages, the sharing of data and discussions that this initiative is advancing are of potentially great value because NASH member institutions collectively serve 40 percent of the nation's public postsecondary students. Its impact on institutions that are not organized into systems (e.g., Arizona's community colleges) would be indirect.

COMPLETE COLLEGE AMERICA

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts and annual counts (disaggregated by student characteristics)
PRINCIPAL USES FOR DATA	State accountability; state policy reform

Established in 2009 with the support of five national foundations, Complete College America is a national nonprofit working to significantly increase the number of Americans with a college degree or credential of value and to close attainment gaps for traditionally underrepresented populations. Starting with the premise that states have the authority to shape postsecondary institutions and the capacity to lead systematic change, CCA's principal tactic for achieving the intended results is state-level policy change. Governors and other state leaders must commit to being accountable for selected outcomes and to report a common set of agreed upon measures that include intermediate benchmarks (National Center for Higher Education Management Systems n.d.; National Governors Association 2010). Twenty-two states have made this commitment.

The specific measures and reporting requirements are under development and reporting has not yet begun. The intent is that completion data will be reported at the state and institutional levels, while the intermediate measures will be reported at the institutional level only. The National Governors Association has adopted the same set of metrics and lent its name to the effort—which is now called "NGA Common Metrics." The CCA and NGA metrics are grouped into progress metrics and outcome metrics. This grouping is based on when in the course of an educational program students reach the metrics, not whether or not the metrics are necessary for them to complete a program. This contrasts with our approach, which distinguishes between intermediate points that students must pass through and academic behaviors that predict completion but are not necessary for it.

SINGLE-STATE OR SINGLE-SYSTEM INITIATIVES

THE WASHINGTON STATE STUDENT ACHIEVEMENT INITIATIVE

TYPES OF MEASURES	Milestones
UNIT OF ANALYSIS	Annual counts
PRINCIPAL USES FOR DATA	State accountability; performance funding; institutional improvement

Arguably the most well known state effort to measure intermediate student outcomes is Washington's *Student Achievement Initiative*.[1] Led by the Washington State Board for Community and Technical Colleges, the SAI is based on research by the Community College Research Center and tied to the policy goal of increasing educational attainment for all Washingtonians. The initiative measures six sets of "achievement points," ranging from increasing basic skills to completing degrees and certificates. Colleges earn points based on the number of students who reach the specified achievements. Colleges receive funding in addition to their regular state appropriations for increases in the number of achievement points they earn in a year.

The SAI is the first instance of a system-wide performance funding policy designed around a set of intermediate measures. Although the funding allotted for the initiative is less than 1 percent of the system's budget, there is interest among the state's policy leaders in increasing the share of funding awarded based on achievement point performance.

OHIO PERFORMANCE FUNDING

TYPES OF MEASURES	Milestones
UNIT OF ANALYSIS	Annual counts
PRINCIPAL USES FOR DATA	State accountability; performance funding; institutional improvement

The Ohio Board of Regents recently initiated a performance funding effort that applies across all sectors of public higher education but uses a different approach for each sector. The approach for four-year institutions does not involve the use of intermediate measures. For community colleges, Ohio uses a set of intermediate measures similar to those in Washington, with additions that the board feels are important to track.[2] This framework grew out of the state's participation in the *Achieving the Dream* Cross-State Data Work Group and from the work done in Washington.

As in Washington, Ohio colleges will accumulate "success points" based on the number of students who attain the measured achievements. A key difference from the Washington *Student Achievement Initiative* is that Ohio colleges will receive a portion of their basic allocation based on their shares of the total momentum points earned. The portion of funding generated by points will begin at 5 percent in the 2011 fiscal year, with plans to increase that share to 30 percent. In Washington, the base-funding model is unchanged and colleges earn performance funds on top of base funding. As noted, the portion of performance funding is much less than what is planned in Ohio.

CITY UNIVERSITY OF NEW YORK

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts and annual rate counts
PRINCIPAL USES FOR DATA	Institutional improvement

The City University of New York also uses intermediate measures of student outcomes and academic behaviors as part of a broad array of indicators in its Performance Management Process (City University of New York n.d.). The Performance Management Process, an important component of the university system's planning process, is intended to provide clarity about the institutions' priorities and to recognize performance in meeting those priorities. Most of the measures are applied to both the two- and four-year institutions in the CUNY system, although some are applicable only to one type of institution. Financial incentives are tied to performance on all of the indicators when funds are available.

TENNESSEE PERFORMANCE FUNDING

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts and annual rates
PRINCIPAL USES FOR DATA	State accountability; performance funding; institutional improvement

The Tennessee Higher Education Commission's performance funding measures for the 2005-10 cycle and, more specifically, the student persistence measures for community colleges, include some intermediate measures of student progress.[3] In this accountability system, all community colleges are assessed on fall-to-fall persistence and degree completion rates. Additionally, colleges choose four other measures from a set of eight, some of which are intermediate outcome measures (e.g., proportion of students who successfully complete their developmental course with a grade of A, B, C or P) and enroll in a related college-level course; the proportion of students who successfully complete college algebra). Institutions' performance on these measures is judged through comparisons to data from peer institutions that report data to the National Community College Benchmarking Project.

MULTI-INSTITUTIONAL INITIATIVES

NATIONAL COMMUNITY COLLEGE BENCHMARKING PROJECT

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts and annual rates
PRINCIPAL USES FOR DATA	Institutional improvement

Two hundred and ten participating colleges report performance data on some of the 130 benchmarks used in this project, although no college reports on all of the benchmarks.[4] Participating colleges receive data in exchange for their own information and a small fee. The data from the project are not publicly available.

The importance of this project is its potential influence on state accountability reporting and the capacity of institutions to track performance on intermediate measures. Tennessee's adoption of its performance measures is a good example of how the availability of data can lead states to adopt certain measures in their own accountability systems. Tennessee chose its performance metrics in part because of the availability of comparative data from the benchmarking project. Thus, although the benchmarking project focuses primarily on individual institutional improvement, it can affect state policy and certainly can promote the expanded use of data and of intermediate measures across the country.

CALIFORNIA LEADERSHIP ALLIANCE FOR STUDENT SUCCESS

TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts and annual rates
PRINCIPAL USES FOR DATA	Institutional improvement

The California Leadership Alliance for Student Success is an example of a project focusing on a subset of institutions within a single postsecondary system with the potential to affect state policy (Center for Community College Student Engagement 2009). CLASS, a collective effort of 12 community colleges focusing on leadership strategies for improving student success. Project staff, funded by foundations, bring teams of college leaders together to discuss student success issues. A key component of the work of these college teams is the provision and analysis of data on intermediate measures (e.g., completion of the first collegiate-level courses in English composition, U.S. history, and college algebra) and academic behaviors (e.g., share of courses completed successfully). Institutions use a tool to run a set of analyses on data that relate to the topic of discussion. Although it only involves 12 colleges from a system of 112, the examination of the data in relation to student success could have important system-level and state policy implications that would ultimately affect student success at all California community colleges.

AMERICAN ASSOCIATION OF COMMUNITY COLLEGES' VOLUNTARY FRAMEWORK OF ACCOUNTABILITY

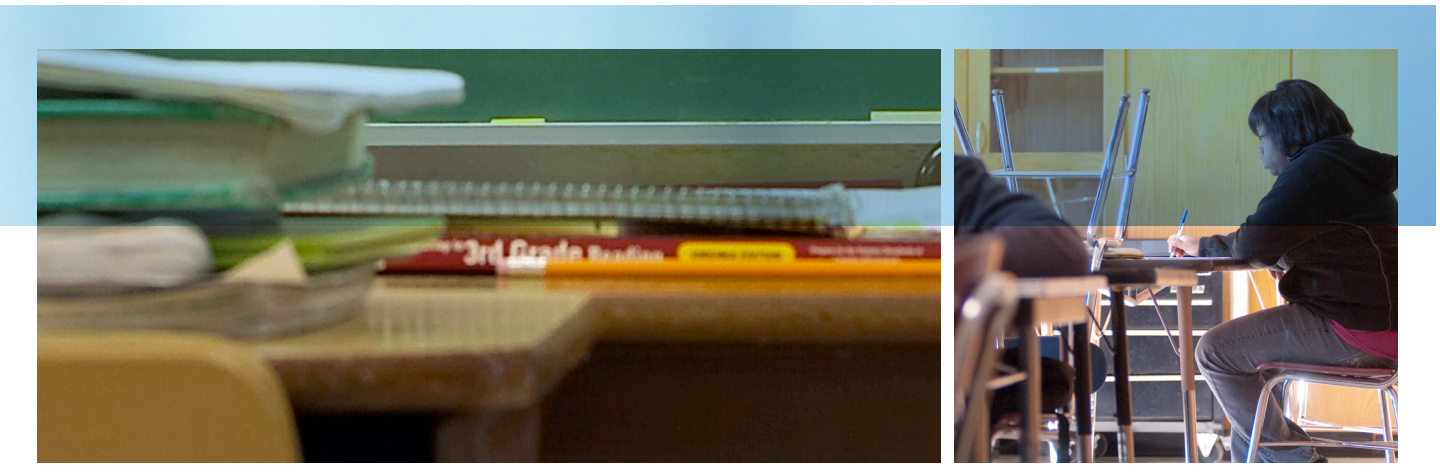
TYPES OF MEASURES	Milestones and success indicators
UNIT OF ANALYSIS	Cohorts
PRINCIPAL USES FOR DATA	Knowledge building in support of institutional improvement; state accountability; state policy

This project follows closely upon the Voluntary System of Accountability begun in 2007 by a group of four-year universities under the sponsorship of two of their membership associations. As with VSA, this initiative appears to be aimed at demonstrating accountability to state policymakers through means that the colleges themselves determine are appropriate. The definitions and instructions for calculating the measures will be reported in fall 2011. In view of the important function that intermediate measures are serving for community colleges, it is likely that intermediate measures will be prominent in this project as well.

BILL & MELINDA GATES FOUNDATION STUDENT PROGRESS AND COMPLETION MEASURES FOR GRANTEES

TYPES OF MEASURES	TBA
UNIT OF ANALYSIS	TBA
PRINCIPAL USES FOR DATA	State accountability

The Gates Foundation is drafting a set of measures that it plans ultimately to ask all grantees in its community college portfolio to report. The intent is to foster consistency among grantees about how to measure results, accelerate knowledge building in the field by facilitating comparisons across projects, and contribute to the growing momentum toward a common set of metrics to assess student progress and completion. Drawing from some of the above cases, the current metrics include a wide variety of success indicators and milestones. With so many grantees involved in other initiatives that require reporting, the foundation hopes to design a template that will meet its somewhat different needs (which include internal evaluation) while minimizing reporting burdens on its grantees.



CONSIDERATIONS FOR USING INTERMEDIATE MEASURES TO INCREASE STUDENT SUCCESS

The range of efforts reviewed above demonstrates that the first generation of milestone application promises to enrich our understanding of student transitions, progress, and completion. The following discussion is intended to influence the next stage of development by suggesting how these efforts might coalesce around some common practices in order to be most effective and increase alignment across these efforts.

1. DISTINGUISHING MILESTONES FROM SUCCESS INDICATORS CAN HELP MATCH DATA WITH USERS AND PURPOSES

In most cases where intermediate measures are being reported and used, no explicit distinction is made between milestones and success indicators. Making a distinction could be helpful because the two types of measures are best suited for use by different stakeholders for somewhat different purposes.

While the ultimate purpose of tracking and acting upon better data is to improve student outcomes; institutional leaders, postsecondary system leaders, and state-level policy actors play different roles in accomplishing this common purpose. Institutional leaders need to examine student-level data in detail to determine where student progress is stalling and why—the latter so that they can adjust institutional practices (e.g., the operation of academic advising; the class schedule; the developmental math curriculum). State policymakers need to know a bigger picture: are they getting the outcomes they need from public investments in postsecondary education and policies? They typically do not need to dig as deeply into data as institutional leaders do.

Postsecondary system leaders occupy a key place that spans institutional practice and state policy. Particularly in states where postsecondary systems have authority over institutions and chief responsibility for state governmental relations, system leaders are accountable to state policymakers for shaping system policies and influencing campus practices to deliver the desired outcomes. They are accountable to their own institutions to represent the needs of the system at the state level in order to seek policy reforms and appropriate resource investments. To fulfill these responsibilities, they need to know where and why students are stalling, what might be done about it, and what policy changes at the system and state level are needed.

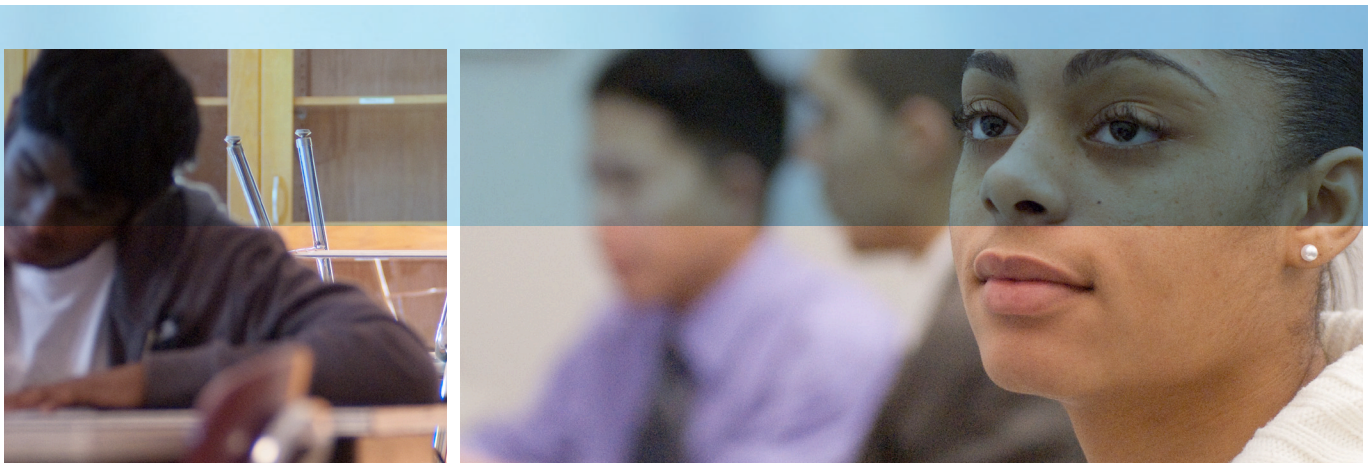


Table 1 shows that the different primary roles in the effort to increase student success have implications for the types of measures that are most appropriate at each level.

TABLE 1. PRIMARY USE OF INTERMEDIATE MEASURES, BY LEVEL OF ACTOR

ACTOR	PRINCIPAL INTEREST	TYPE OF MEASURE	PRIMARY USE
Institutional leaders	Where is student progress stalling and how can campus practices be changed to improve success?	Milestones and Success Indicators	Institutional Improvement
Postsecondary system leaders	How can the system's institutions collectively deliver the results that the state wants and needs?	Milestones and Success Indicators	Institutional Improvement; State Accountability; State and System Policy
State-level policymakers	How well are the state's investments and policy design delivering the results that the state needs?	Milestones	State Policy

Milestones are the intermediate and final outcome measures that are most useful for state-level actors: they help lawmakers understand whether state goals are being met. Lawmakers need outcomes information to help them decide how best to invest state resources across the scope of state programs. They have less need for information on how institutions have produced the outcomes (i.e., the kinds of success indicators included in many of the cases reviewed here). For example, state lawmakers probably do not need to know whether community colleges have introduced mandatory student success courses or if universities require students to declare majors by the time they have earned 60 credits. Unless information is directly relevant to a state-level policy decision, it seems unnecessary to include it in a state-level reporting system, and doing so could detract from the simplicity of such a system. In fact, reporting on success indicators could encourage lawmakers to micromanage institutions, rather than to hold them accountable for outcomes and give them the flexibility to produce those outcomes as they best know how.

To be most useful to state lawmakers, a reporting system should include milestones that reflect the state's specific goals. States would likely have some milestones reflecting their particular goals. For example, states that want to increase the use of the two-year sector as a gateway to Bachelor's degrees could emphasize such milestones as completion of a lower-division general education pattern or transfer from a community college to a four-year institution. States that are particularly focused on increasing the employability of undereducated adults could track skill gains in adult basic education and completion of a year's worth of credits (the level of credits associated with an increase in earnings) (Grubb 2002). If a state is concerned with developing a knowledge-based, high-technology economy, it could track the completion of gateway and advanced mathematics courses, community college student transfers to universities in selected fields, and the award of Bachelor's and graduate degrees in STEM fields. As a final example, states with growing performance gaps among minority populations could track transitions from developmental to college-level coursework for underrepresented minority populations and the subsequent earning of college degrees.

At the institution and system levels, both milestones and success indicators are essential types of intermediate measures to collect and analyze. It is the promise of the pairing of these two types of measures that is driving the interest in intermediate measures across the country. Milestones can be tracked to help institutions see where student progress gets stalled and to focus institutional attention at the troublesome transition points. Success indicators can then be examined to explore why students are not making better progress.

Examining milestones alone can certainly be instructive to institutions and systems. For example, milestone data showing that few students make the transition from adult basic education to college-level instruction could lead institutions to better align the curriculum between sectors, develop new tools for assessing student skills, or change instructional practices. As another example, data showing high levels of attrition after students have completed a year's worth of college credit might lead to the expansion of "first-year experience" interventions beyond the first year. And data showing that most students never complete college-level math can galvanize efforts to improve math instruction.

Examining success indicators alongside milestones can deepen understanding of the problem and help suggest what specific interventions may be warranted. Success indicators measure things that students do while pursuing the completion of a program. For example, students attend full time (or part time), they enroll in remedial work in their first term (or delay remediation), they register for their courses on time (or enroll late for many courses), and they attempt college-level math by their second year (or put off taking math). Because these academic behaviors have been documented in research to correlate with completion, they are of diagnostic value and can help guide system and institutional policy and practice to improve outcomes for students.

As shown in Table 2 on page 15 using California data, a larger share of students who complete college-level math within two years and students who earn at least 20 credits in their first year achieve each of the milestones assessed. For example, 61.1 percent of students who completed college-level math within two years completed a certificate or Associate's degree or transferred within seven years compared to 22.0 percent who did not complete math within two years. These data point to strategies (e.g., better advisement; accelerated developmental education) that help students complete college-level math early as a way to increase completion rates. Success indicators can be identified through a review of existing research on predictors of student success or through finding correlations of milestone attainment in the analysis of system or institutional data.

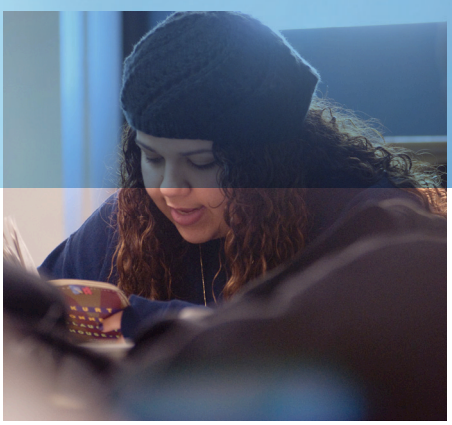


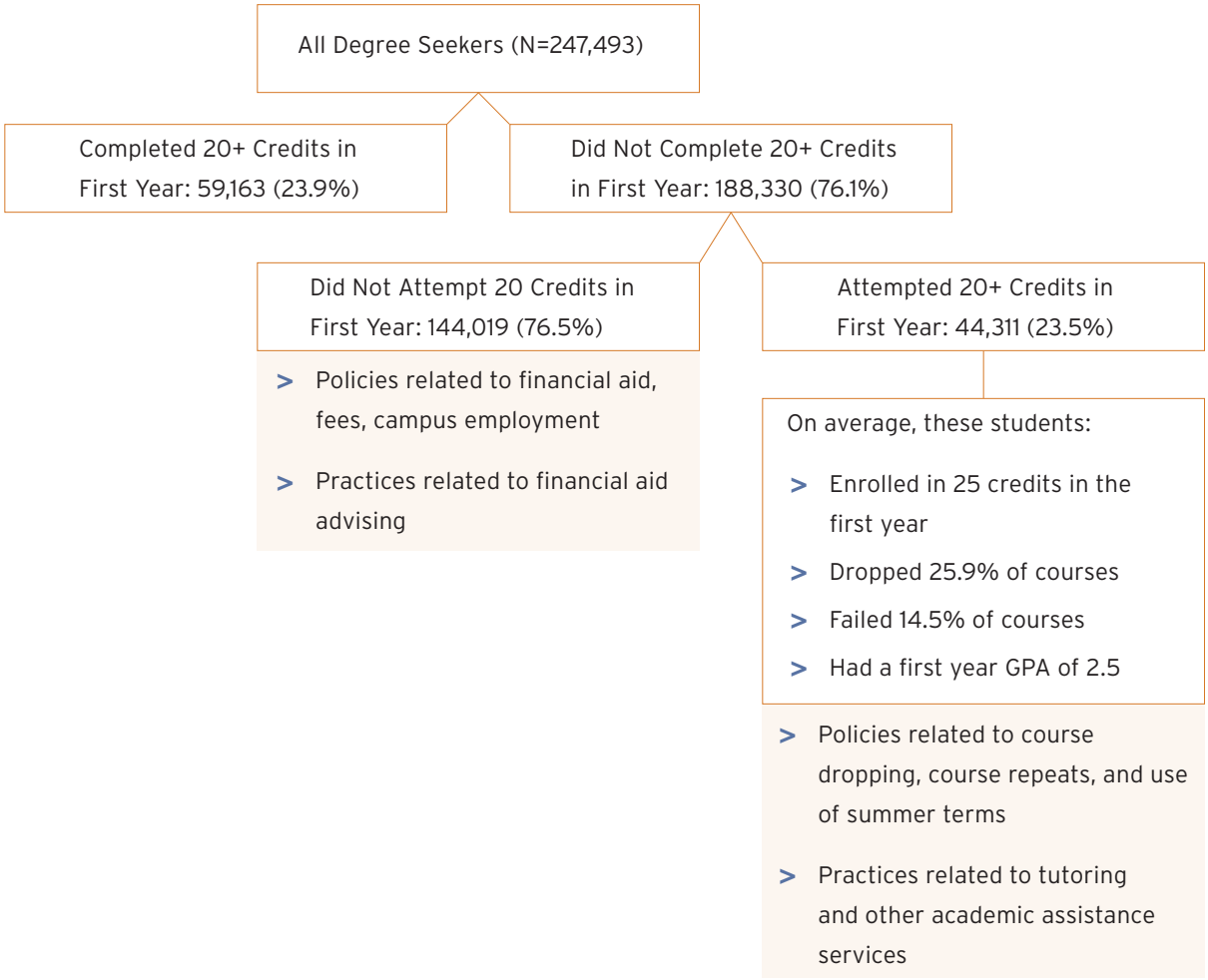
TABLE 2. MILESTONE ACHIEVEMENT BY SUCCESS INDICATOR ATTAINMENT IN A COHORT OF CALIFORNIA COMMUNITY COLLEGE STUDENTS

	RETENTION TO 2ND TERM	RETENTION TO 2ND YEAR	EARNED 12+ COLLEGE-LEVEL CREDITS	EARNED 30+ COLLEGE-LEVEL CREDITS	COMPLETED TRANSFER CURRICULUM	EARNED CERTIFICATE	EARNED ASSOCIATE'S DEGREE	TRANSFERRED	ANY COMPLETION
COLLEGE-LEVEL MATH									
Completed within 2 years (21%)	92.8%	86.7%	95.9%	83.4%	50.4%	3.2%	20.6%	53.1%	61.1%
Did not complete within 2 years (79%)	70.1%	52.2%	55.4%	33.3%	9.9%	3.4%	5.3%	16.9%	22.0%
FIRST-YEAR CREDITS									
Earned 20+ credits (24%)	99.3%	89.0%	97.7%	86.5%	44.2%	6.2%	20.6%	46.4%	57.9%
Did not earn 20 credits (76%)	66.0%	48.3%	51.1%	27.7%	8.1%	2.4%	3.9%	15.7%	19.4%

Source: Moore, Shulock, & Offenstein (2009)

Institutions and systems can dig deeper into the data to understand more fully what changes to policies and practice may affect student success. Figure 2 on page 16 shows how further analysis can begin to break down the reasons why students fail to accumulate 20 or more credits in their first year in a cohort of students in the California Community College system. Most students in this cohort did not complete 20 credits because they did not attempt that many credits. This finding points to the potential of financial aid policy and practices for increasing the number of students who reach the 20-credits-in-the-first-year success indicator. Perhaps more surprising is that nearly one-quarter of the students who did not reach the 20+ credit level actually attempted well over 20 credits, on average, but dropped or failed a large portion of those classes. This finding suggests a different set of potential interventions related to policies on course drops and repeats as well as practices related to academic assistance services like tutoring and early alert programs.

FIGURE 2. PATTERNS RELATED TO EARLY CREDIT ACCUMULATION



There is a wide variety of success indicators and systems; institutions need not track all of them in their routine monitoring processes. Just as state-level reporting systems should be simply structured around key policy goals, institutional reporting should coalesce around those indicators that best illuminate patterns of student progress and success. Some of the measures identified in the research literature as predicting student success are more significant than others, and some duplicate the information provided by others (Moore & Shulock 2009). For example, whether a system tracks completion of 20 credits in a year or the first-year credit completion ratio is probably not going to make a large difference in the ability to diagnose completion problems.[5] These two measures are so highly correlated that tracking one is probably sufficient. As another example, an institution may find that tracking first-year credit completion ratios and first-year GPA provides no additional information than tracking one or the other. To make the best use of their analytical resources, colleges and systems should track a few measures that capture a variety of academic behaviors rather than track multiple variations of essentially the same measures of academic behavior.

Based on a review of the research literature, key success indicators to track are measures of progress through remediation, gateway course completion, credit accumulation, and related academic behaviors (Moore & Shulock 2009). Colleges and systems can use these measures to change policy and practice in order to improve outcomes for students because they

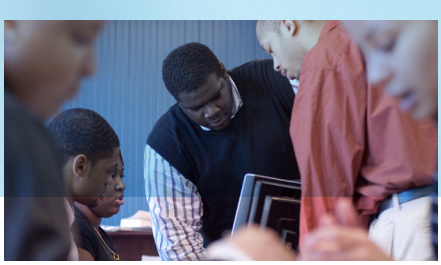
COLLEGES AND SYSTEMS CAN USE THESE MEASURES TO CHANGE POLICY AND PRACTICE TO IMPROVE OUTCOMES FOR STUDENTS BECAUSE THEY PREDICT COMPLETION OF MILESTONES.

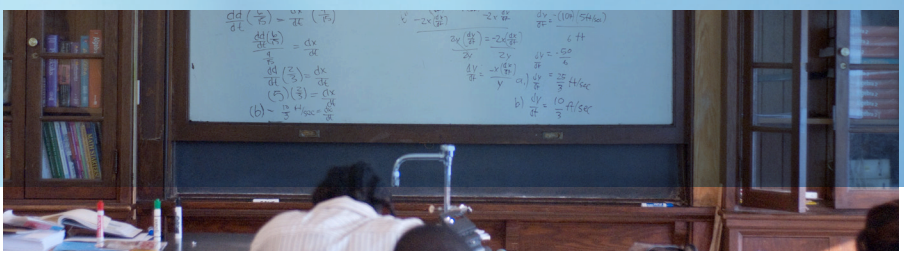
predict completion of milestones. For example, institutions and systems may want to track the share of students enrolling right away in needed remediation. If a sizable number of underprepared students are delaying remediation, then the institution or system may want to create policies and engage in practices to ensure that all new students are assessed and directed to the appropriate coursework, and that enough sections of remedial courses are available for students who need them. Similarly, if colleges and systems tracking completion of college success courses find that a small share of students complete these courses, they can take steps to ensure that there are adequate course offerings at convenient times and require or encourage students to take them. As a final example, when faced with many students who are dropping or failing a large share of their courses, colleges can develop early alert systems, improve tutoring services to provide more academic assistance, and enact policies to limit course dropping and repeats.

2. MILESTONES ARE PROMISING COMPONENTS OF PERFORMANCE FUNDING APPROACHES

The three state accountability efforts reviewed (Washington, Ohio, and Tennessee) tie funding to colleges' outcomes on intermediate measures. Washington and Ohio use similar benchmarks but have different methods of allocating dollars based on performance. In Tennessee, performance on the intermediate outcomes is a component of the formula for allocating performance funds. In addition to these state efforts, the CUNY system's performance management process includes financial incentives for performance on intermediate measures (specifically, presidential and executive raises and funds for professional activities such as travel, software purchases, and professional development).

As states explore performance funding models to incorporate fiscal incentives for desirable outcomes, milestones are appropriately getting more attention. Earlier attempts at designing performance funding systems were flawed in part because they put too much emphasis on degree completion and overlooked the value of rewarding institutions for intermediate student achievements and for meeting other state priorities. Although performance funding is very much an evolving practice, the concept of milestones appears to have much to offer as states attempt to design effective and fair funding models.





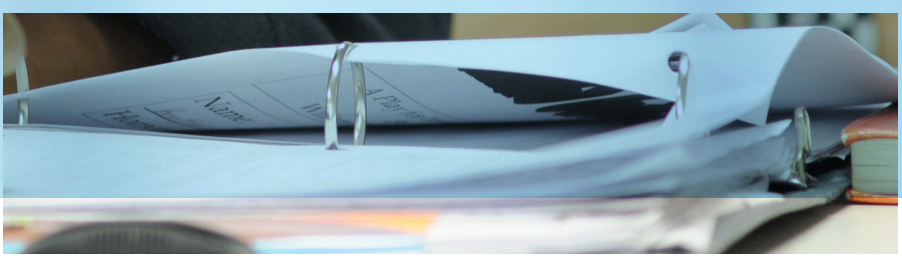
3. COHORT TRACKING, DISAGGREGATED BY SUB-POPULATION, CAN BEST SUPPORT INTERVENTION STRATEGIES

Some efforts to track milestones and success indicators follow cohorts of students, and some report annual activity in the form of numbers or rates of students who attain the outcomes or exhibit the academic behaviors of interest. Tracking cohorts of new students is generally preferable to tracking annual numbers or rates for purposes of accountability and institutional improvement. Cohort rates of students' milestone attainment are easily understood and well suited for accountability reporting because they assess productivity and institutional effectiveness. They are also easy to understand for the purposes of making changes to improve student outcomes. When examining the rate at which members of a cohort complete 30 college units, for example, it is easier for colleges and systems to think about the contextual factors that could explain the rate because they know when those students entered and that all students entered under the same institutional policies and practices.

However, tracking cohorts is a more difficult task for institutional researchers. It requires choices about students to include in the cohort (e.g., all students; degree-seeking students; students in need of remedial coursework) and the data necessary to construct the cohorts (e.g., course-taking behavior to determine degree-seekers). Another disadvantage of cohort tracking is the need to allow for a reasonable period of time before progress through the milestones and the cohort completion rate can be assessed.

Annual activity, such as the number of students earning degrees in a year, is relatively easy to calculate. Institutions and systems using annual activity measures either report on the number of students who attain an outcome or engage in an academic behavior in a year, or calculate a rate by dividing this number by a population of students (e.g., all students enrolled). This approach is more suitable for accountability purposes than it is for institutional improvement, although it has limitations even for accountability reporting. First, counts of students who achieve milestones are only valuable if they are tied to specific state goals. For example, if a state determines that it needs 30,000 Bachelor's-degree earners a year, then the number of degree earners would indicate whether or not that goal was met. Absent an identified need, the number of students attaining outcomes in a given year is of little value because it is heavily driven by enrollment and does not gauge productivity or institutional effectiveness. Calculating annual rates is a better measure of productivity than just annual volume, but it too can be affected by year-to-year changes in enrollment. For example, the share of students who complete gatekeeper math out of all students enrolled can drop if the number of new underprepared students increases.

Both cohort and annual counts can be most powerful if they are conducted separately for key sub-populations (e.g., underrepresented minorities; older students; underprepared students). Certainly, one of the nation's foremost challenges is closing the success gap across racial and ethnic groups. The in-depth analysis supported by milestone and success indicator data could be a significant boon in the concerted—but largely unsuccessful—efforts to date to close these gaps. Research has found that student attainment of milestones and the correlation to certain success indicators varies by student group (Moore et al. 2009). Identifying these differences can give systems and institutions insight into the completion issues faced by different groups and potential strategies to address them.



4. IMPROVED DATA SYSTEMS SHOULD BE A PRIORITY

Measuring and tracking milestones and success indicators requires a robust data system that includes student-level transcript data on course-level credits attempted and completed, with information on course titles and grades earned. Data on student demographic characteristics and academic backgrounds are also necessary in order to disaggregate reporting by student race or ethnicity, gender, age, income, and level of academic preparation. Even states and systems with well-developed data systems encounter difficulties in monitoring all of the intermediate outcomes and student characteristics that they would like. A common problem is that when data are not used for any meaningful purpose, there is no incentive to ensure that those data are accurate. Thus, when a system that routinely collects a wide variety of data tries to use them to analyze milestones and success indicators, it may find that much of the data are inaccurate or missing.

A COMMON PROBLEM IS THAT WHEN DATA ARE NOT USED FOR ANY MEANINGFUL PURPOSE, THERE IS NO INCENTIVE TO ENSURE THAT THOSE DATA ARE ACCURATE.

Improving data systems can be costly. As a cost-savings action, measures are sometimes chosen because the data are available rather than because they are important. While this is a pragmatic way to begin to monitor student data, it is not advisable to build data and reporting systems around preexisting data elements. Institutions, systems, and states should strive ultimately to get data that will help them answer the questions they need answered in order to improve student success.

Three common data challenges that systems and institutions face are:

- Identifying which students need remediation;
- Collecting data on family income levels; and
- Tracking transfer students once they leave community college.

Educating underprepared students is an ongoing challenge for higher education institutions and systems; community colleges are particularly challenged in this regard. To track progress in getting underprepared students ready for college-level work and completing college degrees or certificates, institutions and systems need good data about the preparation of entering students. Yet placement test scores and data on who is referred to remediation are often missing from data systems. Colleges and institutions frequently rely on whether or not students enroll in developmental coursework as a proxy for remedial need. However, this practice can lead to erroneous conclusions if many students in need of remedial coursework are not taking the classes. An analysis of California Community College data found that students who took remedial courses were about as likely to complete degrees as those who did not, despite the well-established relationship between academic preparation and success.[6] That counterintuitive finding is likely the result of counting both well-prepared students and students needing but not taking remediation in the same group for lack of data on academic preparation.

Data on students' level of preparation and whether or not they were referred to remediation also would allow tracking of students' adherence to placement decisions. Research suggests that many students do not complete developmental education sequences because they do not enroll in the course to which they are referred or, upon the completion of the first remedial course that they need, do not enroll in the next remedial course in the sequence (Bailey, Jeong, & Cho 2010). Improving success in developmental coursework is likely to require careful monitoring by systems and institutions of students' progress from assessment through referral to, enrollment in, and completion of developmental courses.

Even if a system collects data on remedial assessments and placement decisions, the institutional and system policies on assessment and placement can affect the quality of that data. If colleges do not make assessment mandatory, they may be missing data on the level of preparation for many of their students. Additionally, if multiple assessment measures or cut scores are used across the colleges, the classification of students who need remedial coursework will be inconsistent across colleges, limiting the value of comparisons. To most accurately identify students in need of basic skills, state systems should collect data on students' preparation and require institutions to assess all students and encourage greater uniformity in assessment tests and cut scores.

The academic success of financially needy students is of great importance to states, systems, and institutions. Unfortunately, determining students' income is difficult and this limits tracking the success of needy students. Whether or not a student received a Pell grant is often used as a proxy for income, but the value of this measure depends on the number of students applying for the grant. Many low-income students do not apply (Asher 2007). Unless all students who qualify for Pell apply and receive the grant, differences between Pell recipients and non-Pell recipients could be due to the students' income level or to the effect of financial aid. Using the median income of students' neighborhoods is a possible proxy for direct income data but does not fully substitute for accurate student-level income data (Dougherty, Hare, & Natow 1999).

Tracking community college students who transfer to four-year private or out-of-state institutions can be a particular problem in states that have a large private sector or are located in regions where students frequently cross state boundaries. Without good data on student movement into private and out-of-state institutions, transfer rates will be understated in accountability reporting and little information will be available about the subsequent progress of transfer students. Additionally, colleges and systems will not have the best information to make changes to improve transfer rates if students transferring to private or out-of-state institutions are misclassified as failing to transfer.

5. DATA ARE NOT ENOUGH: A CULTURE SUPPORTIVE OF DATA USE MUST BE ESTABLISHED

Beyond choosing a good set of milestones and success indicators and having the data systems to track them; states, systems, and institutions need the capacity to convert data into useful information. They also need the capacity to translate this information into policies and practices that benefit students.[7] As states, systems, and institutions begin or expand their work with longitudinal data systems, they should also address the human capacity demands of a data-driven decision-making enterprise.

INSTITUTIONAL CAPACITY

There are several factors related to an institution's capacity to analyze milestones and success indicators, and make changes based on this analysis. Institutions need to engage faculty and staff in broad dialogue about the value of data and discuss what the data mean. This process should focus on drawing connections between the data and the policies and practices that may explain them. To facilitate this process, institutions need the research capacity to produce readable reports for broad audiences and to engage in additional, iterative analyses of student-level data to clarify findings

and answer questions. Additional analyses may involve using other student enrollment data not included in the core set of milestones and success indicators, as well as breaking the data down further (e.g., to the program or classroom level). Institutions also need to be committed to making institutional changes based on the data. They need to have instilled a culture of evidence-based decision making. Institutional leadership is vital for instilling such an institutional culture. Effective advocacy for elevating relevant findings to the system and state policy levels is another aspect of institutional capacity to use data to improve student outcomes.

POSTSECONDARY SYSTEM CAPACITY

CROSS-INSTITUTIONAL DISCUSSIONS OF DATA CREATE THE OPPORTUNITY FOR INSTITUTIONAL AND PROFESSIONAL DEVELOPMENT THROUGH HIGHLIGHTING PERFORMANCE DIFFERENCES AND EXPLORING THEIR CAUSES.

State systems require analytical capacity of their own to analyze milestones and success indicators. Systems can produce sound institutional comparisons by providing centralized data storage and ensuring uniform data definitions across colleges within the system. System offices can also analyze data at institutional and system levels and provide supplementary research support to compensate for lower levels of capacity available at some institutions. System offices can facilitate conversations across colleges about milestone and success indicator data. This can be done through statewide organizations such as presidents' councils and academic senates. Cross-institutional discussions of data create the opportunity for institutional and professional development through highlighting performance differences and exploring their causes. These discussions can help colleges identify policies and practices that lead to improved student outcomes. Systems can share data with one another, as is done in the *Achieving the Dream* Cross-State Data Work Group and the *Access to Success* initiative. These discussions can help systems identify the likely effects of state and system policies on student outcomes. Like institutions, systems need to have the commitment to make policy changes and advocate for state policy change.

STATE-LEVEL CAPACITY

Capacity at the state level begins, first and foremost, with a framework of state goals around which to establish a meaningful state-level reporting system. Milestones tied to important state goals are the most useful form of information on student outcomes for state policymakers. Thus, it is necessary to have a clearly articulated framework of state goals on which to base a set of appropriate measures.

In addition, states need a process for regularly and systematically reviewing and interpreting the data. Some states do this effectively by means of a higher education accountability system under which a designated coordinating agency uses the data to diagnose the state's challenges and make recommendations for changes in policy and investment strategies. The role of the coordinating agency points to a final state capacity requirement: an effective state coordinating body to translate institutional- and system-level findings to the realm of state policy.

IN SUMMARY

The rapidly developing efforts to track milestones and success indicators have much potential for improving student outcomes. These approaches can be most effective when they give careful consideration to the appropriate uses for the different types of data, how the measures are tracked, and the collection of high-quality data on important student outcomes and behaviors, and when processes and structures are developed to utilize the information effectively.

Through the effective use of these measures; states, systems, and institutions can create a foundation for using student data to drive change in policy and practice. Over time, we should see an increase in the attainment of interim milestones and, most importantly, an improvement of final outcomes: completion and career advancement across all populations.

APPENDIX 1: SUMMARY OF MILESTONES AND SUCCESS INDICATORS

MILESTONES		SUCCESS INDICATORS	
TYPE OF MEASURE	WHO IS TRACKING IT	TYPE OF MEASURE	WHO IS TRACKING IT
Retention/persistence	ATD, CLASS, Complete College America, NCCBP, CUNY PMP, Tennessee	Began remediation in a specified period of time	A2S
Completed or succeeded in developmental courses	NCCBP, Ohio, WA SAI	Completed remedial courses or coursework in a specified period of time	A2S, CLASS, ATD, Gates
Passed exams on exit from remediation	CUNY PMP	Completed gateway courses in a specified period of time	A2S, ATD, Complete College America
Remedial student enrollment in college-level coursework	Tennessee	Credit completion ratios	A2S, ATD, CLASS, Complete College America, Tennessee
Remedial student completion of college-level coursework	Complete College America, NCCBP, A2S, Tennessee	Basic skills course completion ratios	CLASS
Completed five credits in mathematics	Ohio, WA SAI	Completed credits in a specified period of time	A2S, ATD, Complete College America, CUNY PMP, Gates
Completed a certain number of credits	Ohio, WA SAI, Gates	Completed or enrolled in summer courses	A2S, CUNY PMP
Completed gateway course	CLASS, NCCBP, Tennessee, CUNY PMP	Enrolled full time	A2S, Gates
Passed proficiency exams	CUNY PMP	Enrolled continuously	A2S
Still enrolled with a number of units completed	ATD	Students' grades	NCCBP
Completed program objective	Tennessee	Declared major at specific	CUNY PMP
Completed a degree or a number of units	Ohio	Passed remedial skills test in a specified period of time	CUNY PMP
Transferred without an award	ATD	High school student enrollment in college courses or completion of college credits	CUNY PMP, Ohio
Transferred	NCCBP, Ohio, Tennessee, NCCBP, Complete College America	Student satisfaction	CUNY PMP, Tennessee
Completed certificate or degree without transfer	ATD	Admission or placement test scores	CUNY PMP, Gates

MILESTONES		SUCCESS INDICATORS	
TYPE OF MEASURE	WHO'S TRACKING IT	TYPE OF MEASURE	WHO'S TRACKING IT
Transferred with a degree, certificate, or earned a minimum number of units	ATD, Gates	Community college student enrollment in university courses	Ohio
Completed certificate or degree	WA SAI, CUNY PMP, Tennessee, Complete College America, NCCBP, Gates	Time to degree	Complete College America, Gates
Completed credential in specific fields	Gates	Enrolled in remediation	Complete College America, Gates
Total success rate	ATD	Degree credits earned by remedial students in a period of time	Gates
Passed licensure exams	CUNY PMP	Remedial students who complete college level coursework in that subject in a period of time	Gates
Job placement	CUNY PMP, Gates	Enrolling in college soon after high school	Gates

ATD: *Achieving the Dream* Cross-State Data Work Group; CLASS: California Leadership Alliance for Student Success; NCCBP: National Community College Benchmarking Project; CUNY PMP: City University of New York Performance Management Process; Tennessee: Tennessee Performance Funding: Ohio: Ohio Performance Funding: WA SAI: Washington's *Student Achievement Initiative*; A2S: *Access to Success*; Gates: Bill & Melinda Gates Foundation Student Progress and Completion Measures for Grantees.

The 130 colleges funded for *Achieving the Dream* also collect and report data about their efforts to improve student outcomes on a larger set of measures. The *Achieving the Dream* metrics in this report refer to those developed by the Cross-State Data Work Group and include all community colleges in participating states, not just those funded for *Achieving the Dream*.

APPENDIX 2: DETAILED DESCRIPTIONS OF MILESTONES AND INDICATORS

MULTI-STATE INITIATIVES

ACHIEVING THE DREAM CROSS-STATE WORKGROUP	
MILESTONES	**SUCCESS INDICATORS**
Award of less than an Associate's degree w/o transfer	Earned 24 or more hours in first year
Award of an Associate's degree or higher w/o transfer	Completed developmental math by year 2
Award of less than an Associate's degree and transferred	Earned 48 or more hours in first two years
Award of an Associate's degree or higher and transferred	Passed gatekeeper English or higher by year 3
Transferred w/o an award	Passed gatekeeper math or higher by year 3
Still enrolled with 30 or more college hours	Passed 80% or more of attempted hours in first year
Total success rate	
Persisted fall to spring	
Persisted fall to fall	
ACCESS TO SUCCESS	
MILESTONES	**SUCCESS INDICATORS**
Students began college-level work in discipline that remediation occurred	Began remediation in first term
Student completed college-level course/earned credit in the discipline that remediation occurred	Began remediation after first term
	Completed remediation in first year
	Completed remediation after first year
	Complete gateway courses (English, math) in first two years (2-year institution) or first year (4-year institution)
	First-year credit completion ratio
	First-year credit accumulation
	Earned summer credits
	Full-time enrollment—attempted at least 12 credits during the first term
	Continuous enrollment
COMPLETE COLLEGE AMERICA (DRAFT)	
MILESTONES	**SUCCESS INDICATORS**
Percent of freshman who place and enroll in remedial math, English, or both, and complete college credit-bearing courses in that subject	Percent of students who complete first college credit-bearing math/English in first two consecutive academic years
Graduation rates for 100%, 150%, and 200% (for Associate's degrees) of normal time	Full-time students who complete 24 credits in first year and part-time students who complete 12 credits in the first academic year
Percent of students who transfer from a 2-year to a 4-year	Number of credit hours completed/credit hours attempted
Annual number and percentage of certificates of at least one year, Associate's degrees, and Bachelor's degrees awarded	Average length of time in years, and average number of credits that graduating students took to earn an Associate's degree, a Bachelor's degree, or a certificate
Fall-to-fall retention	

SINGLE STATE OR SINGLE SYSTEM INITIATIVES

WASHINGTON STUDENT ACHIEVEMENT INITIATIVE	
MILESTONES	**SUCCESS INDICATORS**
Number of students earning their first 15 semester credit hours at that institution in a given year	
Number of students earning their first 30 semester credit hours at that institution in a given year	
Number of students who earn 5 college credits in college-level computation or quantitative reasoning programs	
Every time a student makes a significant test gain in math, listening, or reading on CASAS or earns a GED/HS diploma	
Every time a student completes a level in pre-college English and/or math with a qualifying grade	
Earning a certificate backed by at least one year of college, a two-year degree, or completion of an apprenticeship	
OHIO	
MILESTONES	**SUCCESS INDICATORS**
Number of students who complete some remedial student credit hours at that institution in a given year	Number of students who enroll in college courses in a given year while enrolled in high school
Number of students who either earn an Associate's degree in a given year or at least 45 semester credit hours in a given year	Number of students who enroll in college courses at a university, including branches, in a given year
One transfer point is awarded for each year of semester credits attempted that lead to a transfer to a USO university or branch campus in a given year	
Number of students earning their first 15 semester credit hours at that institution in a given year	
Number of students earning their first 30 semester credit hours at that institution in a given year	
Number of students earning their first 5 semester credit hours of General Studies-level mathematics courses at that institution in a given year	
CITY UNIVERSITY OF NEW YORK PERFORMANCE MANAGEMENT PROCESS	
MILESTONES	**SUCCESS INDICATORS**
Pass rate in reading on exit from remediation	Percentage of students passing freshman composition and mathematics courses with a grade of C or better
Pass rate in writing on exit from remediation	Percentage of freshmen and transfers taking one or more courses the summer after entry
Pass rate in math on exit from remediation	Percentage of baccalaureate students who have declared a major by the 70th credit
Percentage of required invitees who took the CUNY proficiency exam	Average number of credits earned by full-time, first-time freshmen in baccalaureate programs in first 12 months
Percentage or required test-takers passing the CUNY Proficiency exam	Percentage of non-ESL SEEK students who pass all basic skills tests within one year
Four-year graduation rate for first-time, full-time freshmen in baccalaureate programs	Percentage of ESL students (SEEK and regular) who pass all basic skills tests within two years

CITY UNIVERSITY OF NEW YORK PERFORMANCE MANAGEMENT PROCESS (continued)	
MILESTONES	**SUCCESS INDICATORS**
Six-year graduation rate for first-time, full-time freshmen in baccalaureate programs	Percentage of Associate's degree students not fully skills proficient upon initial testing who have met basic skills proficiency in reading, writing, and math by the 30th credit.
Four-year graduation rate for full-time transfers in baccalaureate programs	Total College Now enrollment (high school and college credit)
Six-year graduation rate for full-time transfers in baccalaureate programs	Percentage of College Now participants who earn an A, B, or C in College Now high school and college-credit courses
Six-year graduation rate for full-time, first-time freshmen in Associate's degree programs	Student satisfaction with academic support services
Percentage passing the Liberal Arts and Sciences Test (LAST) for teacher certification	Student satisfaction with student services
Percentage passing the Assessment of Teaching Skills-Written (ATS-W) for teacher certification	Student satisfaction with access to computer technology
Percentage passing a Content Specialty Test (CST)	Mean SAT scores of regularly admitted first-time freshmen enrolled in baccalaureate programs
Percentage passing the NCLEX exam	Student satisfaction with administrative services
Percentage of test takers with an advanced degree passing at least one segment of the Uniform CPA exam	
Six-month job placement rate in career and technical education programs	
One-year retention rate for full-time transfers into baccalaureate programs	
Two-year retention rate for full-time transfers into baccalaureate programs	
One-year retention rate for first-time freshmen in Associate's degree programs	
One-year retention rate for first-time, full-time freshmen in baccalaureate programs	
Two-year retention rate for first-time, full-time freshmen in baccalaureate programs	
TENNESSEE	
MILESTONES	**SUCCESS INDICATORS**
Proportion of students who successfully completed college-level courses	Scores on the Community College Survey of Student Engagement
Proportion of students who successfully completed their English Composition I course	
Proportion of students who successfully completed their English Composition II course	
Proportion of students who successfully completed their college algebra course	
Proportion of students who successfully completed their developmental course and enrolled in a related college-level course	

TENNESSEE (continued)	
MILESTONES	**SUCCESS INDICATORS**
Proportion of students who successfully completed their developmental course and a related college-level course	
Cumulative first-year grade point average at transfer institution	
Proportion of graduates that complete their educational objective	
Proportion of leavers and non-completers who achieved their educational objective	
Fall-to-fall retention rate	
Degree completion with three or six years	
Average score on a General Education Assessment	
Average score on a major assessment (student learning measure)	

MULTI-INSTITUTIONAL INITIATIVES

NATIONAL COMMUNITY COLLEGE BENCHMARKING PROJECT	
MILESTONES	**SUCCESS INDICATORS**
Success rates in core academic skills areas	College-level course retention and success rates
Certificate, degree completion, and transfer rates	Performance in transfer institutions
Developmental course retention and success rates	Institution-wide grade information
Developmental student success in first college-level course	
Developmental course retention and success rates	
Next-term and fall-to-fall persistence rates	
CALIFORNIA LEADERSHIP ALLIANCE FOR STUDENT SUCCESS	
MILESTONES	**SUCCESS INDICATORS**
Completion of the first collegiate-level courses in English composition, U.S. history, and college algebra	Overall rate of successful basic skills course completion (course completion ratio)
Rate of students who earn degrees or certificates	Rate of basic skills students completion of any basic skills course in first term
Rate of entering students' participation in basic skills education	Overall rate of successful course completion (course completion ratio)
Entering students' persistence rate from fall to spring term of enrollment	
Entering students' retention from fall to fall term of enrollment	

ENDNOTES

[1] See: *Student Achievement Initiative*. Retrieved March 15, 2010, at http://www.sbctc.ctc.edu/college/e_studentachievement.aspx.

[2] See: FY 2010–2011 SSI Funding Formula. Retrieved March 15, 2010, from http://regents.ohio.gov/financial/selected_budget_detail/1011_budget.php

[3] See: Performance funding 2005-2010 cycle. Revised June 2009 to reflect academic audit checklist for graduate programs and scoring of student engagement survey (NSSE/CCSSEE). Retrieved March 15, 2010, at http://tn.gov/thec/Divisions/AcademicAffairs/PerformanceFunding/performance_pdfs/PF%202005-10%20Cycle%20Standards%20FINAL%207-25-05%20Revised%206-1-09.pdf.

[4] See the National Community College Benchmark Project Web site. Retrieved March 15, 2010, at: http://www.nccbp.org.

[5] In other research, we have found a fairly linear relationship between the number of credits completed in a year and the probability of completion.

[6] See: Community College Success: Total Completion, by Basic Skills Status. Retrieved April 28, 2010, at http://www.measuringsuccess.mprinc.com/basicskills.

[7] For additional information on using data to improve student success, see the *Achieving the Dream Field Guide for Improving Student Success*, http://www.achievingthedream.org/docs/Field_Guide_for_Improving_Student_Success.pdf

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