

COMPLETE TO COMPETE

From Information to Action:
Revamping Higher Education Accountability Systems



2010 - 2011
National Governors Association Chair's Initiative

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From Information to Action Revamping Higher Education Accountability Systems

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July 2011



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A MESSAGE FROM THE CHAIR

Governors currently face many critical issues, from health care to transportation to public safety. But perhaps none is more pressing than ensuring that our states are prepared to compete in a rapidly changing global economy. Strong economies are essential for providing a better quality of life for all of our people.

The road to economic growth and competitiveness runs through our community and technical colleges and our four-year colleges and universities. We need more of our people to have education beyond high school—certificates and degrees—to meet the needs of our economy, now and in the future.

That is why I have devoted my term as NGA chair to focusing on college completion and productivity.

The demand for certificates and degrees is real—and growing. Nearly two-thirds of the job openings over the next decade will require some kind of credential after high school. We're currently on track to fall short of filling those openings by three million graduates.

At the same time, our states face real and lasting limits on the resources we have to invest in higher education. Economic growth is likely to be slower in the next few years than it has been in recent years. This will mean slower revenue growth in the states. And there will be plenty of competition for those revenues, from health care reform to pensions to infrastructure.

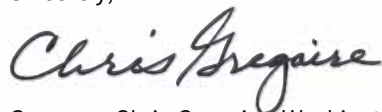
The challenge before us when it comes to higher education is increasing productivity—graduating more students with the knowledge and skills our states need with the resources we have. How do we meet that challenge?

We must start by doing a better job of measuring the performance of our higher education systems. Governors need to know how well our colleges and universities are doing at moving students to and through certificates and degrees if we're going to make smart investments with our limited dollars and gauge the return on those investments.

More importantly, we must use performance measures in making important decisions about investing in and regulating our colleges and universities. Simply collecting data and reporting data will not produce the results we need.

I believe that, working together, we can achieve the goal of producing a more educated workforce. Our colleges and universities have met the challenge of change before, and I am confident they will do so again.

Sincerely,



Governor Chris Gregoire, Washington
National Governors Association Chair, 2010–11



Acknowledgements

This guide was prepared by Travis Reindl and Ryan Reyna in the Education Division of the NGA Center for Best Practices (NGA Center). Dane Linn and John Thomasian of NGA Center provided valuable insight during the drafting and editing process, and Patrick Kelly of the National Center for Higher Education Management Systems performed essential data collection and analysis and reviewed the technical appendix.

NGA Center extends special thanks to the members of the Efficiency and Effectiveness Metrics Working Group, whose insights and expertise made this guide possible:

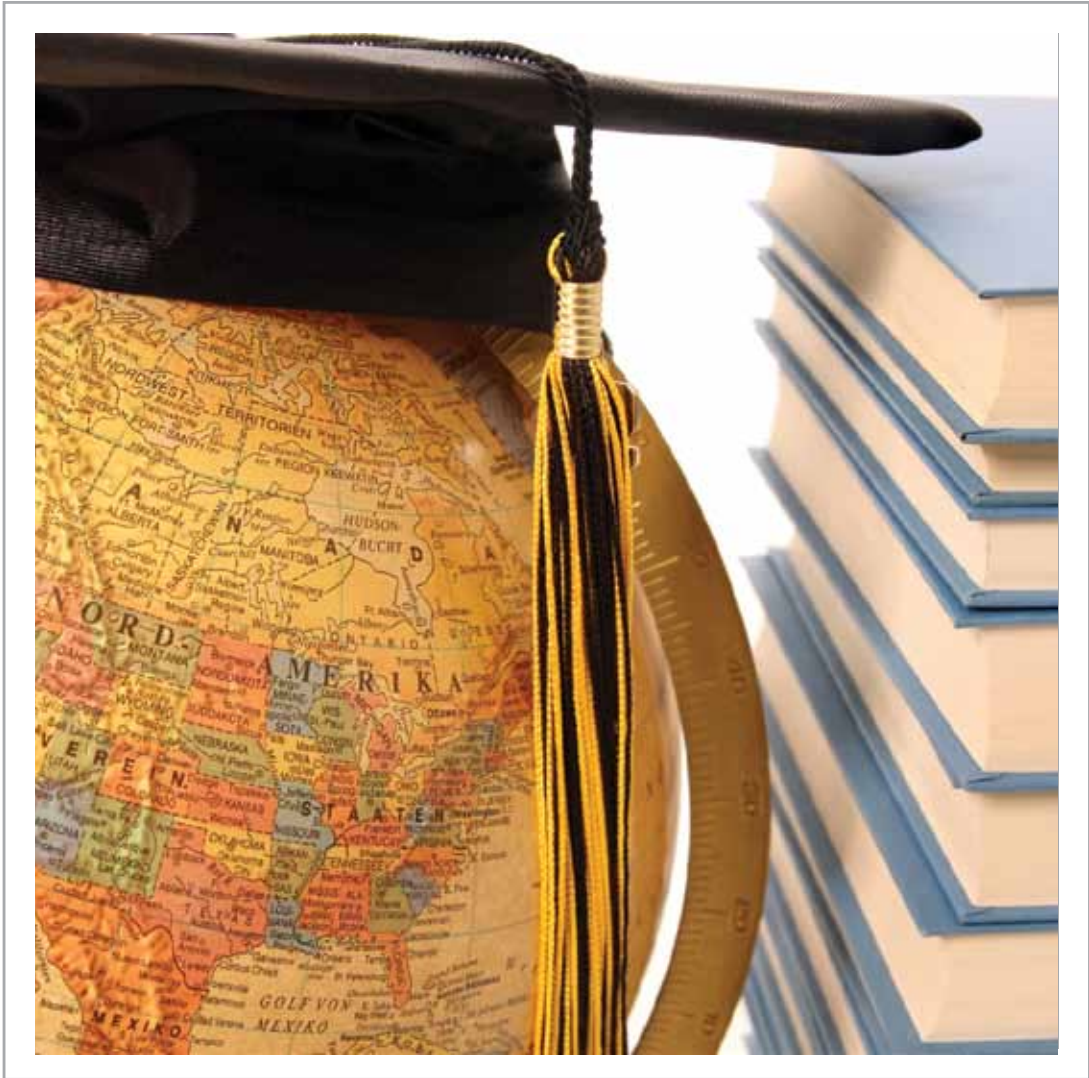
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This report was edited by Church Street Editorial and designed by Hoppity House Designs.

NGA Center wishes to thank Lumina Foundation for Education and the Bill & Melinda Gates Foundation for their support of both this guide and the Efficiency and Effectiveness Metrics Working Group.

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EXECUTIVE SUMMARY

Public colleges and universities, which educate the vast majority of the nation's students, are an important part of states' economic competitiveness efforts. These institutions face three pressures that will demand increased productivity and a data-driven investment strategy moving forward:

- The percentage of jobs requiring postsecondary education continues to rise and is expected to reach 63 percent by 2018. At the same time, there is growing evidence of a mismatch between the skill requirements of new jobs and the skills of individuals seeking them.
- State budgets will continue to be squeezed amid slower revenue growth. Competition for resources will intensify, particularly from health care.
- The number of students from groups (e.g., adults, low-income students, and students of color) that have historically enrolled in and completed certificate and degree programs at lower rates continues to grow as a share of total enrollment.

Increasing productivity in higher education will depend in part on building strong accountability systems that move away from the ones primarily in use today, which tend to emphasize inputs over outcomes and the collection and reporting of data as opposed to using the information in decision-making.

Revamping states' higher education accountability systems should focus on increasing the use of performance and outcome metrics and then using those metrics to make and evaluate policy decisions, particularly in areas such as budgeting, funding, and regulation.

States should include efficiency and effectiveness metrics in their accountability systems to help answer four key policy questions:

1. To what extent are public higher education institutions meeting the state's need for an educated workforce and supporting progress toward longer term economic goals?
2. How many students at public institutions are graduating relative to total enrollment?
3. What is the return on states' and students' investment in public institutions in terms of completed certificates and degrees?
4. How can public institutions demonstrate that efficiency gains are being achieved without sacrificing student learning?

Several policy options are available for making better use of accountability measures:

- **Budgeting.** Governors can use performance metrics to help set parameters for budget requests and determine priorities for campus and higher education system requests.
- **Funding.** Governors can use performance metrics to allocate a portion of state funding to higher education institutions.
- **Regulation.** Governors can exempt campuses and education systems from specific regulations, such as caps on tuition increases, purchasing and procurement rules, or financial or real estate management policies, in exchange for achievement on negotiated performance benchmarks.

CHAPTER 1

Higher Education's Triple Threat (or Opportunity)

For more than a century, states and territories* have relied on their colleges and universities to provide the educated population that is the backbone of a strong workforce and a high quality of life. At the start of the 20th century, land-grant colleges were helping tackle the challenges of industrialization. By the middle of the century, research universities were leading the drive to win the space race. By the end of the century, community colleges and regional universities were opening their doors to millions of new students who were eager to enter an economy that was rapidly becoming more global, competitive, and interconnected.

Today, public colleges and universities face a “new normal” driven by three powerful forces that will affect their ability to meet states’ needs in the 21st century. One is the economy’s increasing demand for more educated workers. The Center on Education and the Workforce projects that by 2018, nearly two-thirds of the job openings will require some form of education beyond high school, almost double the level of just a generation ago. If there is no change in college completion rates, the nation will fall 3 million credentials short of meeting that need.¹

Second, colleges and universities must compete for fewer resources because of the fiscal challenges states face today and will face in the future. Annual revenue growth, which averaged 6.5 percent over the past three decades, is expected to grow more slowly over the coming decade. Competition for existing revenue will only intensify as states grapple with rising Medicaid costs, pension liabilities, and infrastructure replacement needs.² Higher education, a large discretionary item in state budgets, will be particularly vulnerable to cuts in this scenario.

Third, the swelling tide of more students will put pressure on public colleges and universities. In most states, enrollment growth is projected to continue and much of that growth will occur at community and technical colleges, many of which are already operating at capacity.³ Moreover, enrollment will be concentrated among the groups that have historically entered and completed college at lower rates, such as working adults, low-income students, and students of color.⁴

Successfully navigating this new normal will require states to make their higher education systems more productive through strong and sustained policies that encourage improvement. This includes funding institutions on the basis of performance, streamlining administrative operations, and making greater use of lower cost institutions.

The new normal also will require states to develop an investment strategy for higher education. An investment strategy establishes goals and priorities for allocating new and existing dollars, establishes performance expectations for institutions, and measures progress toward those expectations.

THE ROLE FOR DATA AND METRICS

The key ingredient for meeting both of these needs is a strong accountability system made up of relevant performance metrics. Robust input and outcome measures are needed to set ambitious but realistic goals, determine appropriate performance targets for institutions, and assess where new or reallocated dollars are likely to yield the greatest impact. States have invested heavily in the collection of data about their public colleges and universities, particularly input measures like enrollment and revenue, but have not focused as much on outcomes in their accountability efforts. They must now shift the focus from input to outcome metrics and use those metrics to make and evaluate policy decisions.

Inputs Versus Outcomes

For most of the last half century, colleges and universities have been in expansion mode, responding to the demand to continually increase access to higher education. Accordingly, accountability measures have largely reflected inputs such as the number of students enrolled, the qualifications of incoming students, and amount of revenue per student enrolled. However, over the past two decades, the focus has gradually expanded to include student success and outcomes, spurred on by the push for greater efficiency in government and the adoption of a federal law requiring the public disclosure of graduation rate data for all institutions.⁵ NGA Center has contributed to this shift toward outcomes by helping develop a set of **common completion metrics** for states and institutions (see box, page 6).

There is more to be done in this area, however. Many accountability systems do not capture basic **efficiency metrics**, such as the number of students who complete credentials relative to the number of students enrolled, or **effectiveness metrics**, such as production of certificates and degrees in relation to states’ economic needs. Moreover, outcomes for particular groups, such as adults and low-income students, also are typically not reported.⁶

* Throughout this guide, use of the term “state” includes U.S. territories.

The result is an incomplete picture that forces governors and other policymakers to rely on anecdotal rather than hard evidence to make key decisions.

Reporting Versus Decision-making

The other challenge that remains is to use the data that are collected to make decisions that improve the system. Although performance measurement for public colleges and universities has advanced in recent years, the question remains: to what end? Many states collect and report a wide range of data about their campuses and systems, but make little use of these data when making decisions about whether, how, or how much to fund and regulate institutions. A 50-state study of higher education accountability systems found that:

When it comes to translating accountability data into strong incentives that influence institutional behavior, few states follow through. Some states link funding levels with student outcomes, set specific performance goals for higher education leaders, and empower prospective students with information to use in choosing colleges. But most states simply gather accountability information and make it available without any clear plan for making it *meaningful*.⁷

This approach—simply collecting and reporting performance data rather than using the data to inform decisions—has been referred to by some as accountability “lite.” Policymakers and higher education leaders send the message that performance matters by publicly releasing the data, but frequently do not follow through with that message by using the data to make critical—and often contentious—choices, such as whether or how to reallocate state subsidies to institutions.⁸

States need to both increase the focus on efficiency and effectiveness metrics and commit to using the metrics as part of any effort to revamp their higher education accountability systems. Without robust accountability systems, it will be more difficult for states to create an investment strategy that reflects their economic needs and priorities. In the absence of an investment strategy, it will be difficult for states’ colleges and universities to produce enough high-quality graduates to meet growing workforce demands.

TOOLS FOR GOVERNORS: COMPLETE TO COMPETE

Recognizing these challenges, Washington Governor Chris Gregoire chose to focus the 2010–11 chair’s term on improving college attainment and productivity. The resulting *Complete to Compete* initiative was built on the idea that states must address two priorities in their public higher education systems: 1) develop and use stronger metrics for gauging performance, and 2) target areas for improvement and then identify policy options to promote progress toward the goal of a more educated workforce.

Stage I: Completion Metrics

The initiative’s effort to equip governors with better metrics was developed in two stages. The first dealt with college completion: How many students are earning certificates and degrees? Which students? How quickly? To address these questions, NGA Center partnered with Complete College America, a national organization dedicated to boosting college completion, to develop a set of common completion metrics.

The metrics, released in the July 2010 report *Complete to Compete: Common Completion Metrics*, gauge factors associated with higher rates of college completion, such as passing entry-level courses. They also address factors related to the efficiency of college completion, such as time and credits toward degrees. To date, 30 states have adopted the metrics.



NGA Center–Complete College America Common Completion Metrics

NGA Center collaborated with Complete College America to develop a set of 10 measures that are designed to help states and their colleges and universities present a more comprehensive picture of college completion and identify areas where policy changes may be needed. The measures, which expand on existing metrics required by the U.S. Department of Education for financial aid eligibility, cover student progress toward, and achievement of, certificates and degrees.

Progress Metrics	Outcome Metrics
<ul style="list-style-type: none">• Enrollment and success in remedial education programs• Success in first-year college courses (English and mathematics)• Credit accumulation• Retention rates• Course completion	<ul style="list-style-type: none">• Degrees awarded (annual)• Graduation rates• Transfer rates• Time and credits toward degrees

NGA Center and Complete College America recommend disaggregating performance on these measures according to academic preparation, income, age, and race/ethnicity to better gauge performance gaps and determine appropriate policy solutions.

Stage 2: Efficiency and Effectiveness Metrics

The second stage—and the focus of this guide—deals with broader questions regarding the efficiency and effectiveness of a state’s public higher education system. How well are colleges and universities meeting the state’s need for an educated workforce? How productive are institutions, both in terms of graduating students relative to enrolling them and in graduating students relative to the resources invested? And, perhaps most importantly, are colleges and universities maintaining or improving student learning, even as they strive to graduate more students?

To address these questions, NGA Center convened a group of researchers, policy analysts, higher education leaders, and governors’ advisors to identify a set of basic metrics for governors to consult (see **Acknowledgments** for the list of working group members). **Chapter 2** of this guide presents these recommended metrics and poses additional questions and measures that governors and their advisors may want to consider as they develop higher education policy agendas.

The initiative also took on the task of providing tools for governors to apply the efficiency and effectiveness metrics in ways that improve institutional and system performance. With this objective in mind, **Chapter 3** offers governors specific policy options and provides examples from states that have made progress in this area. Finally, **Chapter 4** suggests concrete steps that governors can take in the immediate term toward the development of a more performance-oriented higher education system.

CHAPTER 2

Efficiency and Effectiveness Metrics

To boost productivity and create more effective higher education investment strategies, states must build efficiency and effectiveness metrics into existing accountability systems.

There are several reasons why it is important to emphasize efficiency and effectiveness measures. One is the limitation on state resources noted in **Chapter 1**. Because states will be under increasing pressure to show returns on their educational investments to meet workforce needs, governors and other state leaders will require more and better information about the higher education system's results and the cost of those results.

Unfortunately, some of the most glaring gaps in existing state higher education accountability systems are in the areas of efficiency and effectiveness. Many states fall short in metrics related to completion relative to enrollment, credentials awarded relative to state needs, return on investment, and student learning. A comprehensive review of accountability systems by Education Sector underscored this point by noting that although states have ramped up their higher education data collection in recent years, relatively little effort has been put into developing a better understanding of performance and outcomes. The review said that:

[N]o state is gathering *all* of the information that is potentially available, and few even come close. Best practices often exist in isolation, with a handful of states tracking important outcomes that most states ignore. If each state simply used the best metrics developed elsewhere, it would be able to paint a comprehensive, multidimensional picture of how well its colleges and universities are succeeding. But no states are doing this, and some do almost nothing at all.⁹

At the same time, improvements in data gathering and reporting capacity are allowing more states to tackle efficiency and effectiveness questions. A 2010 survey by the State Higher Education Executive Officers (SHEEO), for example, found that 26 states currently have the ability to link education and workforce data systems to outcomes such as employment rates of recent college and university graduates.¹⁰ Similarly, a recent analysis by SHEEO and Complete College America indicated that nearly all states are able to collect and report the 10 common completion metrics developed in partnership with NGA Center, at least at the state level.¹¹

Moreover, a number of states are taking significant steps toward a greater focus on efficiency and effectiveness. In **Minnesota**, the state's higher education office developed *Minnesota Measures*, an effort to examine the effectiveness of the postsecondary system in relation to five statewide goals. One of the five goals pertains to inputs (access and affordability) and the rest focus on outcomes such as completion, student learning, and linkage to workforce needs.¹² Similarly, the **Florida** Education and Training Placement Information Program is a recognized model for linking education and workforce databases to calculate and report labor market outcomes for high school and college graduates.¹³

Efficiency and Effectiveness Metrics

When it comes to gauging the efficiency and effectiveness of their higher education systems, governors do not need a large number of measures but they do need adequate summary metrics that are related to their states' education and workforce goals and policy priorities. The NGA Efficiency and Effectiveness Metrics Working Group identified key metrics and questions in four areas:

1. Meeting workforce needs;
2. Student output relative to input;
3. Return on investment; and
4. Quality (student learning).

The metrics and associated policy questions are presented below. For additional information on the metrics, including source data and instructions for calculations, consult the **Appendix**.

1. Meeting Workforce Needs

First and foremost on the list of questions should be higher education's contribution to the state's economic condition and prospects. Governors and other policymakers should ask this question: To what extent are public institutions meeting the state's need for an educated workforce and supporting progress toward longer term economic goals? The relationship between the supply of educated individuals and current or future labor market demand can drive a number of key decisions, such as which industry clusters to develop or whether policies are needed to fill labor shortages in critical areas.

Two metrics can help states address that question:

- **Number of undergraduate certificates and degrees awarded relative to the number of employed adults with a postsecondary credential.** This measure describes the relationship between the state's supply of college graduates and demand for workers with post-high school credentials. Increases in this ratio (i.e., change from 50 per 1,000 to 60 per 1,000) should trigger further analysis as to whether the state's postsecondary system is producing credentials in excess of current demand in particular areas. By contrast, decreases in this ratio may indicate that there are unmet demands in the state's labor market, again calling for further analysis. In either case, this metric needs to be considered in the context of other data to be useful (see list below for examples).
- **Number of undergraduate certificates and degrees awarded relative to the number of adults in the state with no postsecondary credential.** The second metric is more relevant to the state's educational and economic aspirations because it describes how far into the pool of potential students the state's higher education institutions are currently reaching.

As states gather and analyze data for these metrics, additional questions may arise regarding the connection between the state's supply of educated workers and labor market demand. These questions range from whether there is a match between the type of credentials being produced and occupational trends or whether the state is a net importer or exporter of college-educated talent. For a broader view of this issue, governors and other state leaders may want to consult and monitor other indicators:

- Workforce goals as part of broader economic development goals;
- Workforce projections, disaggregated by industry cluster and/or credential required;
- Credentials awarded by discipline;
- Percentage of adults with some college or above, disaggregated by race/ethnicity; and
- Student migration (i.e., students' movement into/out of states to enroll in college).

2. Student Output Relative to Input

In addition to supply and demand, states should also monitor how efficient the higher education system is in generating an educated workforce. Governors and other policymakers should ask this question: How many students at public institutions are graduating relative to the number enrolled? Given the ongoing resource limitations states are facing, the need to answer this question will only grow in importance. States that do not improve on this indicator will likely fall behind in the race to capture high-skill, high-wage jobs.

States can begin to address this question with the following metric:

- **Number of undergraduate certificate and degree completions per 100 students enrolled.** This measure is designed to capture output in relation to input; namely, how efficiently and effectively are students moving through certificate and degree programs? Low and/or declining results for this measure should trigger further analysis and discussion about where and why students are falling out of the system.

There are a number of additional questions and metrics that are important for policymakers to consider as they seek to understand why completion-to-enrollment ratios may be shifting. Time and credits to credential is a prime example. Are students taking longer and/or accumulating excess credits to complete certificates and degrees? Participation and success in remedial education is another. How much remedial education is occurring within campuses and systems and how effective is it in getting students on track toward completion? Transfer represents a third key measure. How many students are successfully transferring to another institution on their way to a certificate or degree? These and other related questions can be answered by using the NGA Center-Complete College America Common Completion Metrics (see box, page 6).

3. Return on Investment

Cost and return on investment also are critical considerations when it comes to developing a higher education investment strategy. Although colleges and universities provide returns beyond awarding certificates and degrees—patents from university-led research, for example—delivering an educated workforce is the fundamental priority.

As a result, governors and other policymakers need indicators that address basic questions of productivity: What is the return on the state's and students' investment in terms of completed certificates and degrees? What is campus and system spending producing in the way of completion?

Measuring productivity in higher education is complex and often contentious, but the following basic measures can start the conversation:

- **Number of certificate and degree completions (weighted by field) per \$100,000 of state appropriations and net tuition revenues.** This measure focuses more on the return on the investment of state and student dollars, which may be most relevant to state policy conversations about investment strategy and priorities.
- **Number of certificate and degree completions (weighted by field) per \$100,000 of education and related spending* by institutions.** This measure deals with how effectively institutions allocate core educational dollars, which may be most useful to campus and system boards and leaders as they tackle resource management issues.

Both of these metrics address the relationship between funding and student outcomes even as they account for the fact that some outcomes cost more to produce and/or have more value in the labor market.

It is critical to not only monitor the relationship between inputs and outputs, but also to assess each component separately. For example, if there is a significant decrease in funding levels, institutions may look efficient even though the reality may be that they are not boosting certificate and degree output. In particular, states may want to monitor the change in state appropriations and tuition levels, as well as the change in enrollment and graduation rates, disaggregated by income, age, and race/ethnicity. Increasing efficiency and effectiveness should not be pursued at the expense of access to education.

4. Quality (Student Learning)

Any attempt to measure productivity must account for the quality of the output, which refers to the knowledge and skills students gain in certificate and degree programs. Governors and other policymakers need to ask this question: How can public institutions demonstrate that efficiency gains are being achieved without sacrificing student learning? The simple act of increasing the production of graduates without a concerted effort to gauge learning and skill acquisition will harm states and students in the long run because credentials that fail to adequately prepare students will leave employers without qualified workers and graduates without the necessary qualifications to get hired.

Although policymakers recognize the need for a gauge to ensure that student learning is not suffering in the drive to ramp up completion and attainment rates, a widely accepted methodology to measure this does not currently exist. Governors can, however, require public colleges and universities to provide evidence that improvements in completion and attainment are not occurring at the expense of learning. This evidence should be:

- **Substantive.** Regional accreditation—albeit an important indicator of quality—is no longer sufficient. A combination of direct and indirect measures of learning, as well as a measure of the learning environment, is needed. For example, results from student assessments should be paired with feedback from employer and alumni surveys.
- **Transparent.** Currently, there is relatively little public disclosure of learning outcomes, with the exception of pass rates on licensure and certification exams. Additional measures should be publicly disclosed and readily available. Currently, all institutions participating in the Community College Survey of Student Engagement publicly release their results. By contrast, many of the four-year institutions participating in the National Survey of Student Engagement do not.

* Education and related (E&R) spending is defined as the full cost of instruction and student services, plus the portion of institutional support and maintenance assigned to instruction.

Suggested measures for gauging student learning and the learning environment follow. Several of these measures are endorsed by the Voluntary System of Accountability, an initiative of more than 300 public colleges and universities led by the American Association of State Colleges and Universities and the Association of Public and Land-grant Universities.

Direct measures of learning:

- Assessments of students' general knowledge and skills (i.e., Collegiate Assessment of Academic Proficiency, Collegiate Learning Assessment);
- Licensure/certification exams (i.e., nursing, teacher education); and
- Lumina Foundation for Education's degree qualifications framework, which proposes definitions for the knowledge and skills students should possess for a particular level of credential (e.g., what a student should know and be able to do to receive an associate's degree).

Indirect measures of learning:

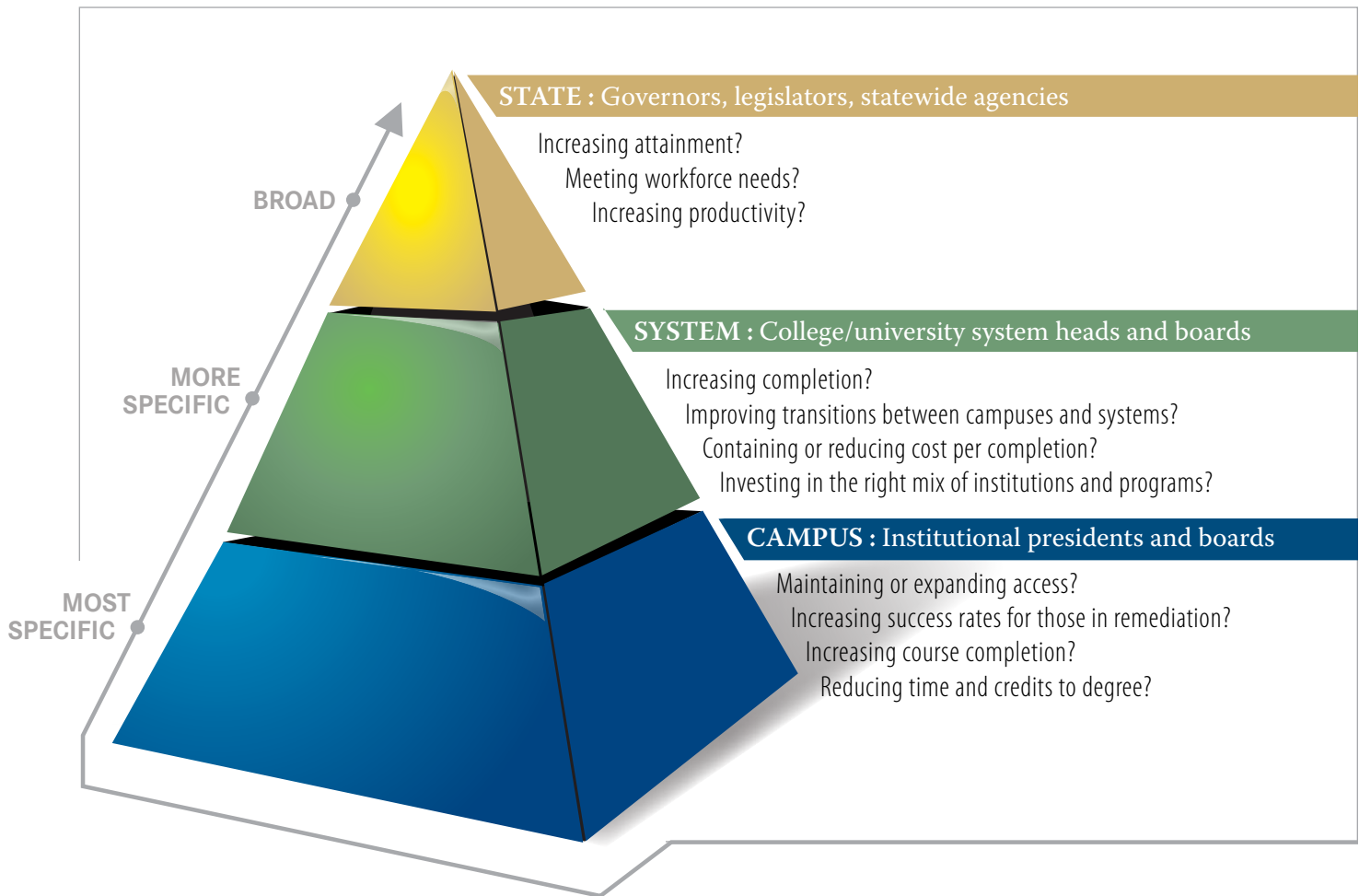
- Acceptance rates for graduate education;
- Employer and alumni surveys; and
- Job placement rates for recent graduates.

Measures of the learning environment:

- National Survey of Student Engagement;
- Community College Survey of Student Engagement; and
- Academic audits.

Additionally, the revamping process should take into account the question of which measures are most relevant at the state, system, and campus levels. What is an appropriate division of labor for monitoring performance within an accountability system? Because states vary considerably in how they organize and govern their public colleges and universities, there is no single model that fits all circumstances and needs.

The figure below presents a general framework that states can use as a starting point for their own efforts. It depicts a system in which institutions are charged with the most granular level of reporting and analysis (e.g., student movement through and performance in certificate and degree programs), systems take a broader view of performance (e.g. cross-institutional measures of performance and efficiency), and states focus on macro-level questions (e.g., system performance in meeting states' economic needs, return on investment).



Other key issues related to collecting, reporting, and analyzing these metrics include:

- **Grouping and comparing institutions.** To promote appropriate comparisons and analyses, institutions should be grouped according to factors such as mission and students served. At a minimum, institutions should be divided into four-year research institutions, four-year baccalaureate and comprehensive institutions, and two-year institutions.
- **Looking at trends versus snapshots.** Examining a single year of data for these metrics will provide a picture of performance that lacks context. As such, analyses should encompass multiple years (e.g., at least three years, but preferably five or more).
- **Ensuring adequate data collection and analysis capacity.** In many states, higher education system institutional research and analysis is minimally staffed and vulnerable to budget cuts. The process of considering and adopting metrics, such as the ones presented in this guide, should include a staffing strategy and work plan for producing and analyzing the data on an annual basis.
- **Eliminating and adding metrics.** Accountability systems tend to accumulate data and indicators, but the review and elimination of obsolete or little-used metrics and reports is a rare occurrence in most states. The process of adopting new metrics should be combined with one that evaluates the entire system and eliminates those that are out of date or not used.

It is important to note that states are taking steps toward a greater focus on efficiency and effectiveness measures. For example, the states participating in Lumina’s Productivity Grant program—**Arizona, Indiana, Maryland, Montana, Ohio, Tennessee, and Texas**—are gathering and reporting data on cost per student completion to help evaluate their policy agendas for increasing productivity. But no state has yet put together a complete picture of efficiency and effectiveness in a higher education accountability system. The metrics presented here provide a base on which states can build as they set out to create that picture.

CHAPTER 3

Using Metrics to Make and Evaluate Policy Decisions

The second key part of the process to drive system changes in higher education involves using real performance and accountability metrics to make and evaluate policy decisions. The move toward stronger accountability systems requires states to bridge the current gap between collecting and reporting performance data and making decisions about funding and regulating colleges and universities. To be most effective, performance metrics should actively and consistently gauge progress toward goals, diagnose problem areas, and help steer investments. Governors can use budgeting, funding, and regulation to integrate performance into their higher education policy agendas.

Budgeting and Funding

One of the most powerful tools that governors have for signaling priorities is the executive budget. The idea of using performance indicators to help governors shape higher education priorities in their budget requests has existed for a number of years—at its height in 2000, performance-based budgeting for higher education was in use in 28 states.¹⁴ In the years since, the practice has fallen prey to a number of forces, including budget crises and lack of consensus between policymakers and higher education leaders regarding the precise performance measures to use or the relative weights to assign to them.

Given the prospect of continuing state revenue constraints and the increasing need to prioritize available dollars, the time may be right for states to revisit the idea—with some adjustments. For example, the definition of performance could be expanded to include factors such as higher education institution efforts to meet states' economic needs or enrollment and graduation of more low-income and adult students. Requests for appropriations in the governor's budget could be based in part on whether or not campuses and higher education systems meet or exceed performance targets.

Washington is a recognized leader in collecting and reporting performance data to inform the budgeting process for state government agencies and public colleges and universities. Under the state's Budget Accounting and Reporting Act, state agencies and higher education institutions must establish measurable goals, set quality and productivity objectives, and use data to track progress for major activities in their respective budgets. The state's office of financial management regularly reviews progress toward goals and objectives, and it can require entities that are not advancing to submit improvement plans along with their next budget request.¹⁵

A second option applies performance measures on the back end of the financing process by using metrics to allocate the state funds that are ultimately appropriated. Currently, the prevailing approach for funding public colleges and universities relies on a combination of enrollment numbers and the prior year funding level. This gives colleges and universities little incentive to focus on retaining and graduating students or meeting state needs. To better drive change at the campus and system levels, performance funding instead provides financial incentives for graduating students and meeting state needs.

As with performance-based budgeting, performance funding has been in existence for some time, but has come and gone, typically in response to the ups and downs of state budget cycles. Performance funding also has tended to involve relatively small amounts of money and award funds on a supplemental basis, rather than as part of core operating funds. Moreover, performance indicators have historically focused on aggregate measures of persistence and completion, as opposed to performance by specific groups.¹⁶

A new generation of performance funding programs, however, suggests that the idea has evolved. Performance allocations are now being made from core operating funds instead of supplemental funds, considerably increasing the amount at stake. Several states have performance allocations totaling more than 10 percent of core funding. The performance indicators also have become more sophisticated and better linked to state needs, with factors such as progress and completion for students from at-risk groups and degrees and certificates awarded in areas of high economic demand.

Indiana is in the process of implementing a two-part shift toward performance in its higher education funding model. The first part revises the state's funding formula to pay for credits completed rather than credits attempted. The second part calls for allocating an increasing proportion of institutional appropriations on the basis of factors such as degrees awarded, degree completion by low-income students, on-time graduation, and successful transfer. The program is being phased in over a number of years to give institutions enough time to make the transition to the new policy.¹⁷

The state also has used performance measures to determine budget cuts. In 2009, Governor Mitch Daniels asked the **Indiana** Commission for Higher Education to allocate a \$150 million, mid-year budget reduction using institutional efficiency and degree production data, rather than simply implementing an across-the-board cut.¹⁸

In 2009, **Ohio** approved legislation to end enrollment-based funding for the state's four-year colleges and universities and phase in a system in which institutions will be funded on the basis of courses completed and certificates and degrees earned. Funding for the state's two-year institutions will also have a performance component, with 5 percent of core funding based on students' achievement of key benchmarks such as passing remedial or entry-level courses.¹⁹

Arkansas Governor Mike Beebe recently signed legislation creating a higher education funding model that will allocate 25 percent of institutional appropriations on the basis of factors such as course and degree completion, particularly in areas of high economic need and among populations such as low-income students, working adults, and students of color.²⁰ Once implemented, it will be one of the most aggressive performance funding policies in the nation.

Similarly, **Colorado** lawmakers approved a measure revising the performance contracts that currently exist between the state's department of higher education and its public colleges and universities. Under the law, the contracts will be revised to include certain performance expectations, such as increasing the number of degrees awarded, reducing enrollment and attainment gaps according to race and ethnicity and region of the state, and maintaining affordability. Up to 25 percent of institutions' state funding above \$600 million will be linked to meeting or exceeding the performance expectations articulated in the contracts.²¹

Regulation

States regulate their colleges and universities in a wide range of areas—from tuition-setting to human resources to construction management and purchasing. As states' share of overall institutional revenue has diminished, a number of college leaders (especially at flagship and research universities) have suggested that the amount of state regulation and oversight should shrink as well. In some cases, college presidents and some state leaders have proposed changes in universities' legal or operating status that would give institutions more autonomy over decisions related to setting tuition, carrying over unspent funds, and managing property.²²

Although colleges and universities raise legitimate issues about the relationship between state support and regulation, governors should include institutional performance toward meeting state needs in any discussion or negotiation about deregulation or autonomy. States may be providing a smaller portion of overall funding, but for most public institutions, the state remains the largest single funding source. By linking deregulation to performance on key measures, governors can take steps to ensure that colleges and universities do not neglect the states' economic goals or the educational needs of residents in their drive to obtain more flexibility.

Virginia has led the nation in this area with the Restructured Higher Education Financial and Administrative Operations Act of 2005. Under the Act, the state may grant colleges and universities increasing levels of freedom from state regulation—particularly in areas such as personnel and financial procedures—in exchange for institutional commitments to meet performance goals related to state needs. The goals cover 11 areas, including access to higher education, retention and graduation, and collaboration with K–12 education.²³

CHAPTER 4

Next Steps

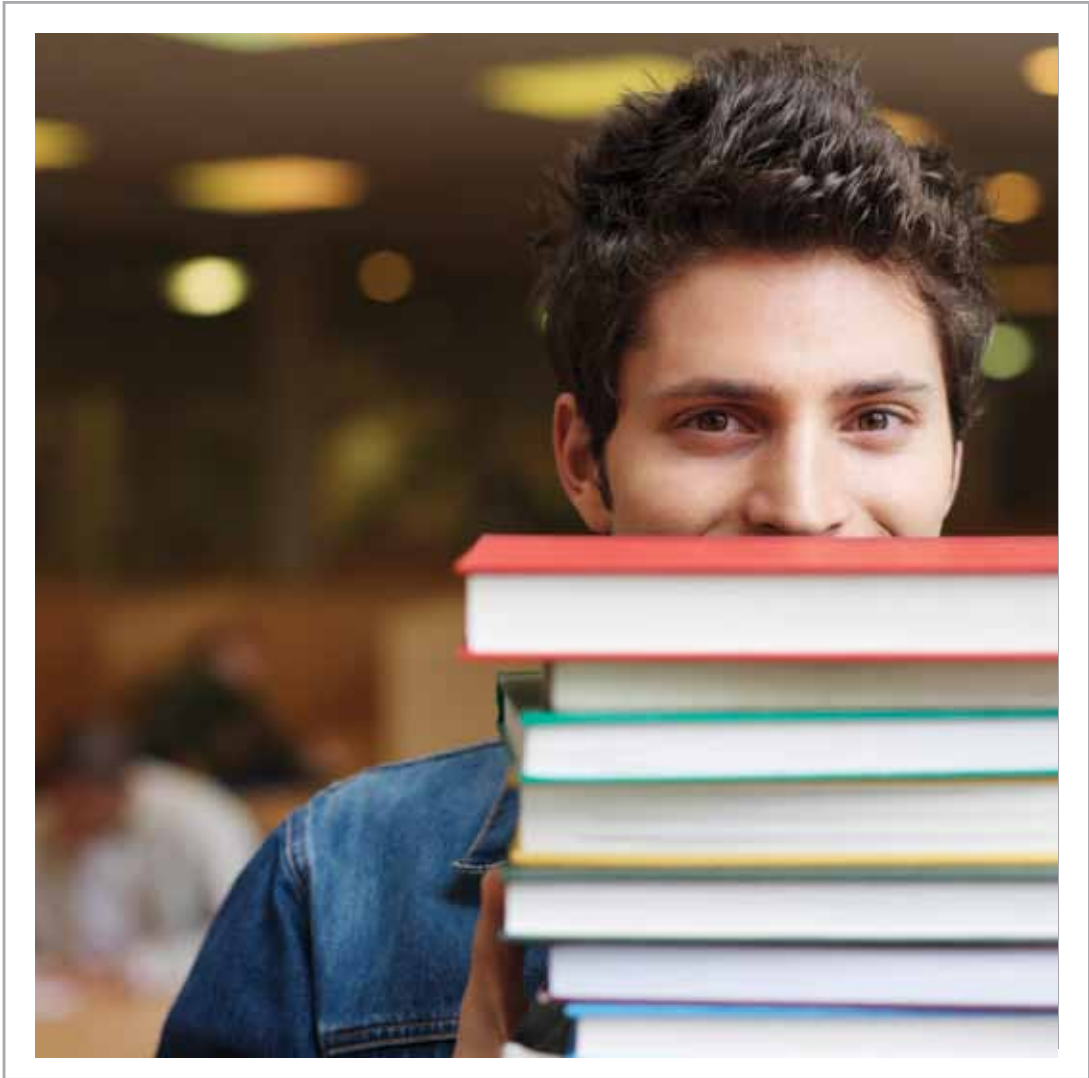
Creating a more actively used and productivity-focused accountability system is not an all-or-nothing or one-size-fits-all proposition. The framework and the metrics presented here are meant to provide states with some components to build systems that meet their particular needs. It is also important to note that overhauling accountability systems need not be done all at once. Governors can take the following concrete steps in the immediate term to get the process started:

- Communicate the importance of measuring and improving performance in higher education as a means of meeting workforce needs.
- Develop statewide higher education performance goals (or review and/or revise these goals if they already exist). Goals help identify appropriate accountability measures, gauge progress, and prioritize funding and other policy actions. States' prior experience indicates that the strongest goals draw on data about current and future state needs, establish ambitious but realistic targets for each institution and the state as a whole, and have support and ownership outside of the state, system, and campus leadership.²⁴ Conversations about metrics should flow naturally from the goal-identification process.
- Establish an expert panel to review existing state higher education accountability measures, reports, and activities and present recommendations for revision. The group's charge could include the objectives presented here: increasing the emphasis on efficiency and effectiveness measures and more actively using the measures. The group also could identify underused or obsolete metrics, reports, and activities that should be discontinued.
- Ask for a dashboard on metrics related to key policy questions such as the ones presented in this guide. Most of the data needed are readily available (and are, in most cases, required for institutional reports that must be submitted to the federal government). The information can be tracked over multiple years and separated by institutional type (to allow for comparisons of institutions with similar missions). These dashboards could be used to set up conversations with boards of trustees, business leaders, and other key constituencies about priorities and issues to address. (NGA Center has produced dashboards for each state that contain similar measures. They are available at <http://www.subnet.nga.org/ci/1011/dashboards.htm>.)
- Appoint individuals to campus, system, and statewide higher education boards who endorse the idea of stronger performance measurement and will advocate for the cause in their role as trustees or regents. The need for this is real; a 2006 survey of higher education board members at two- and four-year public colleges revealed that only about half reported receiving data on institutional spending per student for the previous fiscal year.²⁵

Having and using better performance metrics for higher education will not guarantee that states' needs are ultimately met. But without them, states will have a much harder time navigating the convergence of the rising demand for highly educated workers, fiscal constraints, and an influx of new and different students.

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APPENDIX

Efficiency and Effectiveness Metrics

The recommended metrics in this guide focus on public postsecondary institutions. This is for three reasons:

1. States have primary responsibility for public colleges and universities (funding and regulation);
2. The vast majority of students attend public institutions; and
3. Performance data for non-public institutions (not-for-profit and for-profit) are not available to most states.

States should include data for non-public institutions on these metrics as available and appropriate.

The purpose of this appendix is to increase consistency and commonality across states in reporting benchmark data and measuring future progress in improving the collection and use of efficiency and effectiveness metrics for higher education accountability. NGA Center staff are available to assist states in the collection and analysis of the recommended metrics.

The most general data source for each metric is provided; however, states with unit record systems should use their system- or state-level data to construct the metrics for reporting purposes. States without unit record systems should request that colleges and universities provide data in a way that allows for aggregation at the state level and can be used to construct the metrics. These states should begin the process of adding the additional data elements to their unit record systems as soon as possible.

For policy questions 1–3, the proposed calculations are based on change over five years. Although this time span is not required, NGA Center recommends that states collect and report trend data for at least a three-year period, but preferably for five years or longer.

The National Center for Higher Education Management Systems (NCHEMS) has collected data for all 50 states on each of the efficiency and effectiveness metrics, as well as state-specific weights based on median earnings for the metrics found in policy question 3. Governors’ staff should contact NGA Center to obtain their data and weights.

POLICY QUESTION 1:

To what extent are public institutions meeting the state’s need for an educated workforce and supporting progress toward longer term policy goals?

Metric: Certificates and Degrees Awarded Relative to the Number of Jobs Requiring a Postsecondary Degree

Definition: Ratio of undergraduate degrees and certificates (of at least one year in expected length) awarded per 1,000 employed individuals with postsecondary degrees.

$$\left\{ \frac{\text{Number of undergraduate degrees and certificates awarded}}{\text{Number of employed individuals with a postsecondary degree}} \right\} * 1,000$$

Source: National Center for Education Statistics in the Integrated Postsecondary Education Data System (IPEDS) Completions and Enrollment Surveys and U.S. Census Bureau in the American Community Survey (Public Use Microdata Samples).

Metric: Certificates and Degrees Awarded Relative to the Number of Adults in the State with No College Credential

Definition: Ratio of undergraduate degrees and certificates (of at least one year in expected length) awarded per 1,000 18–44 year-olds with no postsecondary degree.

$$\left\{ \frac{\text{Number of undergraduate degrees and certificates awarded}}{\text{Number of adults in state with no postsecondary degree or certificate}} \right\} * 1,000$$

Source: National Center for Education Statistics in the Integrated Postsecondary Education Data System (IPEDS) Completions and Enrollment Surveys and U.S. Census Bureau in the American Community Survey (Public Use Microdata Samples).

POLICY QUESTION 2:

How many students at public institutions are graduating relative to the overall student population?

Metric: Certificate and Degree Completions per 100 Students Enrolled

Definition: Ratio of undergraduate degrees and certificates (of at least one year in expected length) awarded per 100 full-time-equivalent (FTE) undergraduate students.

$$\left\{ \frac{\text{Number of undergraduate degrees and certificates awarded}}{\text{Number of full-time-equivalent undergraduate students}} \right\} * 100$$

Source: National Center for Education Statistics in the Integrated Postsecondary Education Data System (IPEDS) Completions and Enrollment Surveys. Individual year data for this metric is also available on the NCHEMS data dashboard website, www.higheredinfo.org.

POLICY QUESTION 3:

What is the return on the state and student investment in public institutions in terms of certificate and degree completion?

Metric: Certificate and Degree Completions (Weighted by Field) per \$100,000 of State Appropriations and Net Tuition Revenues

Definition: Ratio of undergraduate degrees and certificates (of at least one year in expected length) awarded per \$100,000 of state and local appropriations and tuition and fee revenue, weighted according to median earnings of graduates by degree level (e.g., certificate, associate's, and bachelor's) and field (e.g., science, technology, engineering, math [STEM]; health; and other).

$$\left\{ \frac{\text{Number of degrees and certificates awarded}}{\text{State/local appropriations and net tuition revenue}} \right\} * 100,000$$

Source: National Center for Education Statistics in the Integrated Postsecondary Education Data System (IPEDS) Completions and Finance Surveys and U.S. Census Bureau in the American Community Survey (Public Use Microdata Samples). States may find single year data for the revenue metric on the NCHEMS data dashboard website, www.higheredinfo.org.

Metric: Certificate and Degree Completions (Weighted by Field) per \$100,000 of Education and Related Spending by Institutions

Definition: Ratio of undergraduate degrees and certificates (of at least one year in expected length) awarded per \$100,000 of education and related spending (see below for definition), weighted according to median earnings of graduates by degree level (e.g., certificate, associate's, and bachelor's) and field (e.g., science, technology, engineering, and math [STEM]; health; and other).

$$\left\{ \frac{\text{Number of degrees and certificates awarded}}{\text{Education and related spending}} \right\} \times 100,000$$

Source: National Center for Education Statistics in the Integrated Postsecondary Education Data System (IPEDS) Completions and Finance Surveys and U.S. Census Bureau in the American Community Survey (Public Use Microdata Samples).

Notes on collection and reporting:

Education and related (E&R) spending is defined as the full cost of instruction and student services, plus the portion of institutional support and maintenance assigned to instruction.

The denominator for each metric should be adjusted using an appropriate deflator and weighted according to the median earnings in the state employment market by degree level (e.g., certificate of at least one year in length, associate’s, and bachelor’s) and field (e.g., STEM, health, and other). Each weight is indexed to the bachelor’s degree median earnings in the state and is multiplied by the number of awards in the corresponding degree level and field. For example:

Degree Level	Median Earnings	Indexed to Bachelor’s Degrees	Awards	Weighted Awards
Certificates	\$20,589	0.56	0	0
Certificate STEM	\$45,554	1.24	0	0
Certificate Health	\$26,396	0.72	0	0
Associate’s	\$30,552	0.83	121	101
Associate’s STEM	\$51,737	1.41	11	16
Associate’s Health	\$42,234	1.15	0	0
Bachelor’s	\$36,662	1.00	1,085	1,085
Bachelor’s STEM	\$63,351	1.73	200	346
Bachelor’s Health	\$52,793	1.44	145	209
TOTAL			1,562	1,757

Finally, it should be noted that the metrics for policy question 3 cover graduate and professional credentials, but the metrics for policy questions 1 and 2 do not. This has been done for the following reasons:

- Recent workforce projections indicate that states’ most acute needs for additional post-high school credentials are at the undergraduate level. This does not preclude states from including graduate and professional credentials in their calculations for metrics related to policy questions 1 and 2.
- Collection and reporting methods for revenues and expenditures do not allow for the separation of undergraduate, graduate, and professional programs, necessitating their inclusion in the completion component calculation for the policy question 3 metrics.

POLICY QUESTION 4:

How can public institutions demonstrate that gains in efficiency are not achieved at the expense of student learning?

Direct Measures of Learning

Skill Assessments

Purpose: Measure an institution's value-added contribution to student knowledge.

Source: Collegiate Assessment of Academic Proficiency (CAAP), Collegiate Learning Assessment (CLA), or Measure of Academic Proficiency and Progress (MAPP). All three instruments are approved learning outcomes measures for the Voluntary System of Accountability.

Licensure Exams

Purpose: Determine whether students graduating from particular fields, institutions, or sectors pass licensure exams required to practice in a specified field (i.e., nursing).

Source: States require different exams based on the specified profession. Data are available from the respective professional associations that require certification.

Degree Qualifications Framework

Purpose: Provide a framework within which states can monitor the expectations for degrees in various fields of study.

Source: Lumina Foundation for Education, available at: www.luminafoundation.org/publications/The_Degree_Qualifications_Profile.pdf.

Indirect Measures of Learning

Acceptance Rates for Graduate Education

Purpose: Determine whether students graduating from particular fields, institutions, or sectors are accepted in graduate programs.

Source: Institutions.

Employer and Alumni Surveys

Purpose: Determine the satisfaction of alumni with respect to education received at their respective institutions and the employer satisfaction regarding the skill levels of students who graduated from particular institutions.

Source: Employer and alumni surveys conducted by colleges and universities.

Placement Rates for Recent Graduates

Purpose: Determine whether students graduating from particular fields, institutions, or sectors are employed within a certain timeframe.

Source: State workforce data, such as unemployment insurance wage records, matched against postsecondary completion records.

Measures of the Learning Environment

Student Surveys

Purpose: Gauge presence of institutional practices and student behaviors that are associated with student learning and retention.

Source: National Survey of Student Engagement (NSSE) for four-year institutions or Community College Survey of Student Engagement (CCSSE) for two-year institutions.

Academic Audits

Purpose: Evaluate how institutions ensure and improve educational quality, particularly at the undergraduate level. The process includes an institutional self-study, followed several months later by a visit from an external audit team. The process is currently in place at institutions in Australia, Hong Kong, and Tennessee.

Source: For additional information on the audit process and rationale, please consult William Massy's paper Metrics for Efficiency and Effectiveness in Higher Education: Completing the Completion Agenda, available at web1.millercenter.org/conferences/papers/conf_2010_1206_massy.pdf.

Other Metrics to Consult

Workforce Projections

Definition: Education requirements relative to forecasted job growth.

Source: Georgetown University's Center on Education and the Workforce produced projections for all 50 states. They can be found at cew.georgetown.edu/jobs2018/states. Data also can be obtained from the U.S. Department of Labor, Bureau of Labor Statistics, Employment Projections Program.

Credentials Awarded

Definition: Annual number of certificates of one year or greater in length, associate's degrees, and bachelor's degrees awarded, disaggregated by age group, gender, race/ethnicity, Pell Grant status (at any time), remedial status, and discipline.

Source: State longitudinal data systems.

Educational Attainment

Definition: The percentage of the population that has attained different educational levels (e.g., less than a high school graduate, high school graduate, some college, associate's degree or higher), disaggregated by racial/ethnic subgroups.

Source: U.S. Census Bureau in the American Community Survey (Public Use Microdata Samples). Additional data are available from the National Center on Higher Education Management Systems (NCHEMS) data dashboard website, www.higheredinfo.org.

Student Migration

Definition: Change over time in the ratio of high school students enrolling in institutions of higher education in state versus out of state.

Source: National Student Clearinghouse.

Time and Credits to Credential

Definitions: *Time to credential.* Average length of time in years a student takes to earn an associate's degree, bachelor's degree, or a certificate of one year or greater compared with normal program time. Start with the degrees/certificates awarded in a specified year and determine how many total years and months elapsed from the first date of entry to the date of completion. Partial years should be expressed as a decimal. Average the number of years across students and report by degree type.

Credits to credential. Average number of credits students have accumulated when they earn an associate's degree, a bachelor's degree, or a certificate of one year or greater. Start with the degrees/certificates awarded in a specified year and determine the total number of credit hours each student completed since first enrolling. Average the number of credit hours across students and report by degree type.

Source: State longitudinal data systems, if available; otherwise, from institutions directly.

Enrollment

Definition: Annual, unduplicated number of students enrolled over a 12-month period at public institutions of higher education, disaggregated by attendance status at entry (full-time or part-time), race/ethnicity, gender, age, and Pell recipient status at entry. Enrollment should be reported for each public institution, and aggregated by sector and by certificate-seeking, associate degree-seeking, bachelor's degree-seeking, status undetermined, or courses only.

Source: State longitudinal data systems.

Enrollment in Remedial Education

Definition: Annual number and percentage of entering first-time undergraduate students who enroll in remedial math, English/reading, or both math and English/reading courses, disaggregated by race/ethnicity, gender, age groups, and Pell status at time of entry.

Source: State longitudinal data systems, if available; otherwise, from institutions directly.

Success in Remedial Education

Definition: Annual number and percentage of entering first-time undergraduate students who complete* remedial education courses in math, English/reading, or both and who complete a college-level course in the same subject, disaggregated by race/ethnicity, gender, age groups, and Pell status at time of entry.

Source: State longitudinal data systems, if available; otherwise, from institutions directly.

Transfer Rates

Definition: Annual number and percentage of students who transfer from a two-year campus to a four-year campus or from a four-year campus to another four-year campus, disaggregated by race/ethnicity, gender, age group, Pell status at time of entry, and remedial status at time of entry.

Numerator: Number of students from the cohort (denominator) who enroll at a four-year public institution of higher education.

Denominator: Number of entering students in two-year public institutions of higher education in the fall semester of a specified year.

Source: State longitudinal data systems, if available; otherwise, from institutions directly.

State Appropriations

Definition: Change over time in the amount of state dollars invested in institutions of higher education per full-time equivalent student.

Source: State Higher Education Executive Officers (State Higher Education Finance [SHEF] Survey).

Tuition Revenue

Definition: Change over time in the amount of student tuition revenue captured by institutions of higher education per full-time equivalent student.

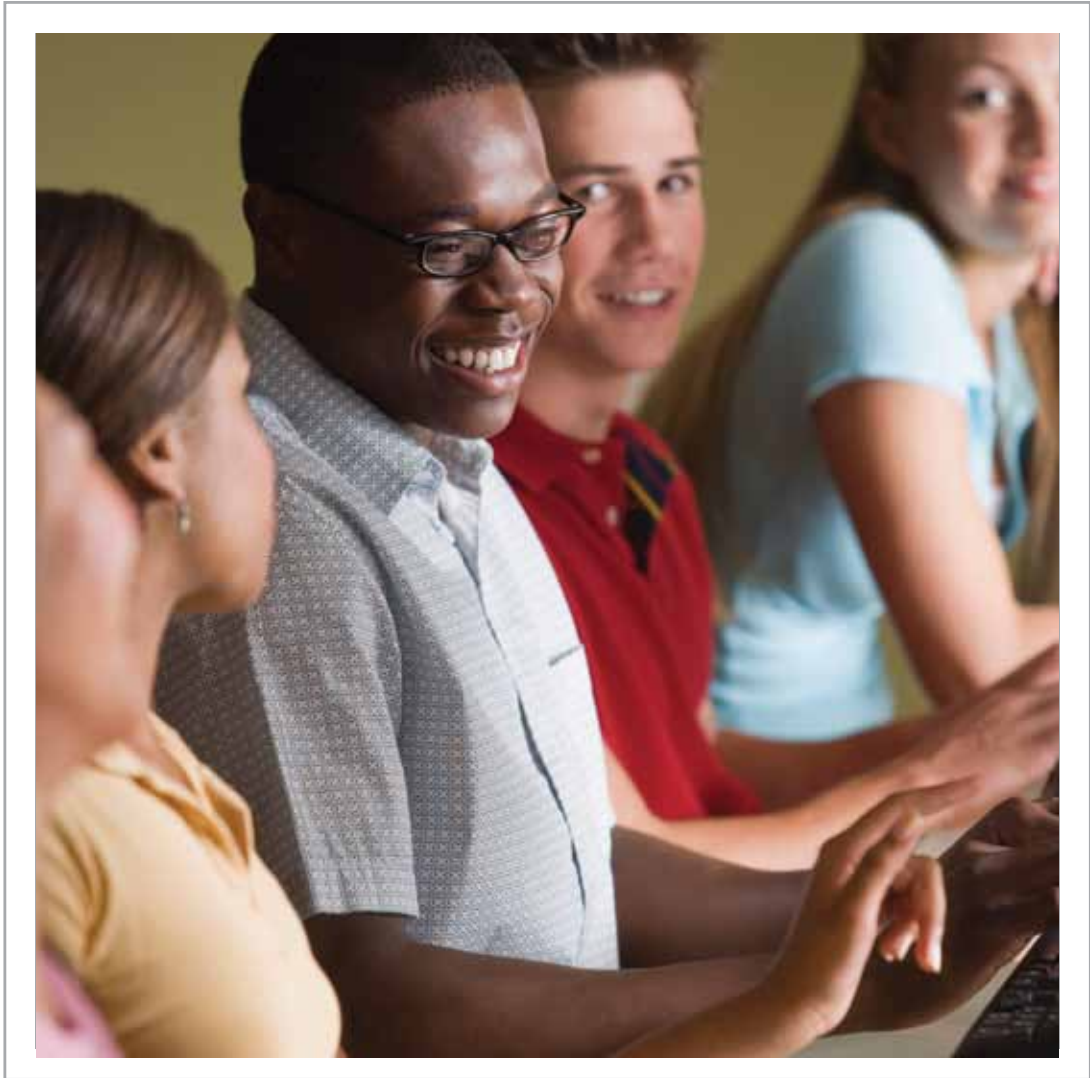
Source: State Higher Education Executive Officers (SHEF Survey).

Graduation Rates

Definition: Number and percentage of entering undergraduate students who graduate from a degree or certificate program within 100 percent, 150 percent, and 200 percent of program time. Disaggregate information by degree/credential type and by race/ethnicity, gender, age group, Pell status at time of entry, and remedial status at time of entry.

Source: State longitudinal data systems, if available; otherwise, from institutions directly.

* In this scenario, "complete" means passing or earning a credit for the course. Institutions should determine what counts as the successful completion of a course (e.g., a mark of "pass" for a pass/fail course or a grade of "C" or better).



NGA CENTER DIVISIONS

The NGA Center is organized into five divisions with some collaborative projects across all divisions.

- **Economic, Human Services & Workforce** focuses on best practices, policy options, and service delivery improvements across a range of current and emerging issues, including economic development and innovation, workforce development, employment services, research and development policies, and human services for children, youth, low-income families, and people with disabilities.
- **Education** provides information on best practices in early childhood, elementary, secondary, and postsecondary education. Specific issues include common core state standards and assessments; teacher effectiveness; high school redesign; science, technology, engineering and math (STEM) education; postsecondary education attainment, productivity, and accountability; extra learning opportunities; and school readiness.
- **Environment, Energy & Transportation** identifies best practices and provides technical assistance on issues including clean energy for the electricity and transportation sectors, energy and infrastructure financing, green economic development, transportation and land use planning, and clean up and stewardship of nuclear weapons sites.
- **Health** covers a broad range of health financing, service delivery, and coverage issues, including implementation of federal health reforms, quality initiatives, cost-containment policies, health information technology, state public health initiatives, and Medicaid.
- **Homeland Security & Public Safety** supports governors' homeland security and criminal justice policy advisors. This work includes supporting the Governors Homeland Security Advisors Council (GHSAC) and providing technical assistance to a network of governors' criminal justice policy advisors. Issues include emergency preparedness, interoperability, cyber-crime and cyber-security, intelligence coordination, emergency management, sentencing and corrections, forensics, and justice information technology.



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