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Using Data to Determine Institutional Participation in State Student Aid Programs REPORT 2



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About the Minnesota Office of Higher Education

The Minnesota Office of Higher Education is a cabinet-level state agency providing students with financial aid programs and information to help them gain access to postsecondary education. The agency also serves as the state's clearinghouse for data, research and analysis on postsecondary enrollment, financial aid, finance and trends.

The Minnesota State Grant Program is the largest financial aid program administered by the Office of Higher Education, awarding up to \$180 million in need-based grants to Minnesota residents attending accredited institutions in Minnesota. The agency oversees tuition reciprocity programs, a student loan program, Minnesota's 529 College Savings Plan, licensing and early college awareness programs for youth.

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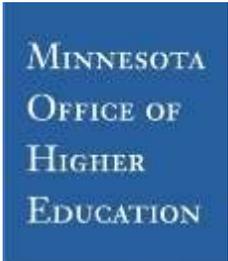
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Introduction

In 2013, the Legislature mandated the Office of Higher Education to identify criteria that could be used to determine institutional eligibility for participation in the state's financial aid programs.¹ The Legislative intent is to ensure that institutions participating in state aid programs are providing students with a quality postsecondary education. The legislation was considered to be a first step in engaging the higher education community in a discussion of how to measure institutional quality and performance to ensure the efficient and effective use of limited state funds.

In its report to the Legislature in February 2014, the Office recommended forming a working group comprised of higher education stakeholders and experts, sought clarifications regarding the intended policy priorities and goals, and identified 13 possible metrics. In addition to ensuring that the final metrics align with state financial aid policy values (access for lower-income students, student success, and student choice), the Office also recommended that metrics could be used to:

- identify high performing institutions,
- determine the practices and policies that set high performing institutions apart, and
- develop recommendations for legislative action and investment to scale effective and efficient practices and policies that maximize access, affordability, and student success.

Since February 2014, the Office obtained clarification of the Legislature's intent, convened a stakeholder working group, and identified metrics that could be used to for determining institutional eligibility for participation in state financial aid programs. This report outlines the final recommended metrics and the principles informing their selection, important limitations and potential unintended consequences, a timeline and the necessary steps for implementation, and concludes with the Office's recommendations.

The U.S. Department of Education has been working on a similar approach for nearly five years, so this is a significant undertaking.

¹ 2013 Laws of Minnesota, Chapter 99, Article 2

Establishing Goals and Metrics

Minnesota is home to more than 200 public and private higher education institutions that serve more than 450,000 students enrolled in credit courses each year. Minnesota's colleges and universities offer students a broad range of options, from short-term certificate programs to graduate and professional programs. Minnesota currently ranks 4th in the nation in the percentage of adults age 25-64 with an associate's degree or higher.² Minnesota's longstanding acknowledgement of the value of a postsecondary education to both the student and the state, as well as recognizing the role that all of Minnesota postsecondary institutions play in helping students achieve their postsecondary goals by allowing state financial aid resources to follow the student to the institution that best meets their needs, has likely contributed to Minnesota's high educational attainment level.

Efficient use of Minnesota's limited state financial aid depends on state goals being clearly defined and articulated to institutions eligible to participate in state financial aid programs. While Minnesota statutes articulate three values for state aid programs (access, affordability and choice), Minnesota has not formally defined goals to incentivize institutional behavior. In evaluating goals, policy should not hold institutions accountable for behavior that is not under their direct control, such as federal policies (e.g. student loan borrowing limits), certain student behaviors (e.g. loan default), and macroeconomic conditions (e.g. recession). Policy goals that focus on big picture ends (e.g. increasing completion rates) and articulate the intermediate behavior change desired (e.g. increasing first to second year retention rates) may be the most impactful. It is important to consider that establishing goals may result in institutional behavior changing in unanticipated ways (e.g. initiating more selective admissions criteria to ensure higher retention and graduation rates).

State Priorities

Using the language of the mandate and rationale of increasing the efficient use of state dollars as a starting point, the Office compiled a list of priorities and metrics for the Legislature to consider. The priorities are:

1. Access

Ensuring all students are able to pursue a postsecondary education.

2. Affordability

The cost of attending college continues to rise, requiring a greater financial commitment from students and their families in order to pursue and complete a college degree. Minnesota law and policy supports the values of affordability and choice in higher education through 1) a robust need-based financial aid program that allows students to attend both public and private institutions, and 2) the establishment of a public college or university within 35 miles of every Minnesotan. Minnesotans who stand to benefit from higher education should be able to access the education that best fits their needs and aspirations and afford it without taking on unreasonable debt.

3. Student Success

An effective higher education sector is dynamic and produces graduates in a timely manner with skills, knowledge and abilities that are needed and valued in the Minnesota economy. Colleges and universities, whether public or private, offer both a private benefit to individuals and a public benefit to the state's quality of life and economy.

² Minnesota Measures, 2015

What data will be used?

Metrics drew on existing data as much as possible in order to minimize additional reporting requirements and costs to participating institutions. The proposed final institutional metrics rely heavily on data from state data systems, including the Student Enrollment Record database, State Aid Management data systems, the Statewide Longitudinal Education Data System (SLEDS), in addition to other publicly available information. To ensure compliance with federal and state data privacy laws, only aggregated totals would be presented.

Table 1: Summary of Metrics Proposed

Metric	Measure
Access: Measures of how well the system serves individuals in need of upward economic mobility.	Enrollment of Key Groups (low income, students of color, students over age 25)
Affordability: Measures of educational costs in comparison to available student resources.	Net Price by Income
	Cumulative Debt
Student Success: Measures of how well an institution moves students through the educational pathway. Measures post-enrollment outcomes for students to ascertain whether students are achieving long-term financial sustainability.	Persistence at 12 month intervals
	Credit accumulation compared to program standard
	Completion at 12 month intervals after graduation
	Percent Employed Year Round
	Wage Premium
	Return on Investment

The metrics presented are suggestions based on the Office’s understanding of Legislative intent. Data may not be available nor have benchmarks been set for measuring institutional performance for all of the proposed metrics. The purpose of this report is to provide information that will inform the discussion of data needed for informing policy decisions. A detailed explanation of each metric including its definition, context and limitations is outlined in Appendix B.

Implementation of the Legislature's Intent

If it is the intent of the Legislature to use data and criteria identified in this report to determine which postsecondary institutions would be eligible to participate in state financial aid programs, the implementation could be difficult and complicated. The Office suggests that, at a minimum, the following steps would need to be taken.

Step 1: Data Production

July 2015 (initial), July 2016 (final)

Data reports for each institution would need to be produced by the Office. The reports would be based on the data collected from the various sources identified in this report. The data reports would need to be clear, understandable, and available in multiple forms (i.e. web-based and in paper form) so that they could be used by institutions, policymakers, as well as students and families.

Step 2: Data Validation

August 2015 – January 2016

The data produced and displayed on institutional data reports would need to be validated by the institutions given the high stakes nature of the mandate. The validation process would include:

- Confirming the data before it is published and allowing for corrections to be made
- Providing student-level information to colleges for the OHE constructed metrics

OHE collected data for the administration of financial aid programs to fulfill the agency's statutory reporting requirements which is largely administrative in nature and has some limitations for use in research. For example, there is missing data (e.g. collects enrollment data for fall term only), and data consistency and validity concerns, which would need to be ironed out.

- Confirming or refining comparison groups

Initially, steps 1 and 2 are expected to take a significant amount of time (12 months). In addition, all data reports would need to be updated annually. After the initial data is validated, the time required in the future for validation lessens significantly.

Step 3: Identification of High Performing and Low Performing Institutions

January 2016 – March 2017

This step would require the determination of thresholds or benchmarks for high performance and low performance. There are many complications associated with this step, including the following:

a. Developing Metrics and Benchmarks of Institutional Performance

Developing metrics and benchmarks that isolate the impact of an institution on student access, affordability and success is challenging without utilizing an experimental research design. There are a host of factors affecting whether students choose to attend college, whether they complete, and their ability to obtain a job that pays a sustainable wage. Many are unrelated to the performance of the institution (e.g., larger macroeconomic conditions, technological innovations, and student background characteristics, experiences, and motivations). Clearly, institutions play a vital role in the success of their students, and to some degree, with the exception of open access institutions, an institution's decision to admit a student signals the institution's belief that a student can (and should) be successful. Isolating an institution's effect on student access and success is methodologically challenging. If state funding to

students or institutions is at risk, it would be prudent to ensure that metrics and benchmarks establishing institutional eligibility are valid and reliable measures of institutional performance.

b. Utilization of Benchmarks for Termination of Eligibility

Benchmarks must be research-based. Based on the recent federal action, it is clear that legal implications may arise if benchmarks and thresholds are determined without a basis in research. Metrics determining low-performers would be open to legal challenges if used for eligibility purposes.

In 2009, the U.S. Department of Education began seeking ways to ensure that students enrolled in career training programs were achieving successful outcomes. Known as "gainful employment" regulations, the framework intends to hold certain career-oriented programs at nonprofit, for-profit, public and private institutions accountable for whether their students find jobs and earn a living wage after graduating. Initial regulations were proposed in 2010. Those regulations were challenged in court which determined that the Department of Education had failed to adequately justify the performance thresholds proposed. In October 2014, the Department of Education was able to establish final rules regarding regulation of gainful employment programs. The final rules utilize a single metric of debt-to-earnings with a research-based threshold of 8 percent of total earnings. Research on borrowers in Missouri from 2006 through 2008 found the number of borrowers defaulting increased by 59 percent as the payment-to-income ratio increased from 8 to 10 percent.³ The lesson to states seeking to establish similar performance based thresholds is that failure to use research-based methodologies to establish thresholds opens the possibility of legal actions.

Even if research based benchmarks or thresholds are identified which demonstrate when an institution could be considered high performing and low performing in each of the metrics, they would not necessarily identify the causal factors related to performance. Understanding the reasons why some institutions are high performing and some are low performing would require qualitative measures and advanced research techniques which control for the multiple factors involved in order to isolate institutional behavior.

c. One Benchmark vs Multiple Benchmarks

Performance ratings using several different metrics are difficult to determine. For example, the Legislature would need to determine if an institution that is low performing in one metric but high performing in all others is eligible to participate in state financial aid programs. The Legislature could choose to use a weighted performance scoring method combining data on all metrics. However, there may be advantages to rating institutions on each metric separately to provide a more refined picture of institutional performance as well as for policymakers to align incentives for accountability purposes. Alternatively, aggregating the metrics in some way may provide a better way for students and families to assess 'value'.

d. Institutional Differentiation

Metrics would need to recognize the diversity of institutions. Recognizing the diversity of institutional missions that exist within Minnesota is critical and would more likely facilitate an "apples to apples" comparison. A key component of Tennessee's Outcomes-based Funding Formula, which has garnered a lot of national attention for allocating over 80 percent of state appropriations based on institutional outcomes, is the recognition of institutional mission differentiation. As part of the process of creating the outcomes-based model, the Tennessee Higher Education Commission (OHE's counterpart in Tennessee)

³ Kantrowitz, M. (2010). *Relationship of Default Rates to Debt and Income*.

worked with institutions to develop institution specific outcomes that were appropriate to the institutions' missions.

e. Improvement in Performance over Time

If the intent of the Legislature is to encourage improvement in institutional performance, then recognizing improvement over time would be necessary. Any process that determines eligibility to participate in state financial aid programs should give credit to institutions that are demonstrating improvement by allowing their students to receive state financial aid. Complications for students would arise if they are eligible to receive state financial aid one year at their institution of initial enrollment and then become ineligible to receive state financial the next year while attending the same institution. This volatility could have long-term impacts on the student's and the institution's performance.

f. Administrative Rules Process

Benchmarks developed would need to be added to administrative rules.

Step 4: Statutory Language Changes Needed

January 2015 – January 2018

If research based institutional performance thresholds or benchmarks were to be used for aid eligibility and or licensing termination, the following statute and/or rule changes would be necessary:.

a. Provide statutory authority to establish benchmarks and subsequent administrative rules.

The Office currently does not have statutory authority to establish benchmarks for participation in state financial aid programs.

b. Amend institutional eligibility language to reference future benchmarks established.

Institution eligibility to participate in state financial aid programs is outlined in Minnesota Statutes 136A.103 (State Grant and other grant and scholarship programs) and 136A.15 Subd. 6 (Minnesota SELF Loan). The eligible institution definition is further outlined in Minnesota Rules, parts 4830.0300, 4830.2100, 4830.7200, 4830.8010, 4850.0011.

The current eligible institution definitions apply to **all** state financial aid programs including Minnesota State Grant, Child Care Grants, and American Indian Scholarships. Other state higher education benefit programs like the MN GI Bill and Public Safety Officers Survivor Benefits are also limited to students attending eligible institutions defined in these statutes. Changes to these eligible institution definitions may impact whether an institution has to comply with OHE reporting requirements. For example, ineligible institutions would not have to provide data on their study abroad programs to the Secretary of State or continue to provide enrollment and other data to the Office.

c. Amend language for institutional termination (and reinstatement) of participation in state financial aid to reference future benchmarks established.

The current process for terminating an institution's participation in state financial aid programs is outlined in Minnesota Rules, parts 4830.0120 through 4830.0195. Part of this process allows institutions who are terminated from participation in one or more state financial aid program to request a hearing in front of an administrative law judge. Changes to the rules or adoption of new statutes related to termination would be necessary to implement the legislature's intent related to institutional performance.

In some cases, public postsecondary institutions are required to participate in one or more state financial aid program (e.g. GI Bill). Additional statutory changes would be required in order to resolve conflicting requirements for these institutions if they are determined to be ineligible to participate in one or more state financial aid program.

The final language should also clarify a process by which an institution could be reinstated for participation in state financial aid programs (*Minnesota Statutes 136A.61 to 136A.71 and Chapter 141*).

d. Amend language for institutional registration and licensure to reference future benchmarks established.

The Legislature should also consider aligning the language for termination of state financial aid eligibility with statutes governing institutional regulation and licensure by adding language referencing future benchmarks.

e. Provide clarity regarding the administrative process for implementing termination.

Additional administrative details would need to be clarified either in statute, rules, or administrative policies and procedures. Those include:

- How and when would institutions be notified of their ineligibility to participate in state financial aid programs? When would their ineligibility begin? Would there be a probationary period preceding ineligibility? Would the commissioner have the authority to provide waivers?

The Office estimates that a minimum of 11 months would be required to notify institutions of termination and allow for subsequent administrative hearings and appeals.

- Do we terminate the institution's ability to fund current students or just new students?

Step 5: Consumer Awareness

Ongoing

If institutions are found to be low performing and thus ineligible to participate in some or all state financial aid programs, students and families must be made aware of this information. Current students, in particular, would have to be informed by the Office and/or the institution of the possible consequences for them if they are attending, or will be attending, an institution that can no longer participate in state financial aid programs. Future students and their families considering enrollment in an institution regardless of whether or not the institution is considered high performing or low performing should have access to this information.

Dissemination of this information could be provided using multiple methods including:

- Require institutions to notify students prior to enrollment.
- Requiring institutions to publish information on their website warning students about the institution's low performance and possible termination of participation in state financial aid.
- Requiring institutions to publish information on their website about their eligibility or ineligibility to participate in state financial aid programs.
- Central publication of the information on the Office's website.

Conclusion

Minnesota has made enormous strides in providing better information to students making college choice decisions and to policymakers seeking to gauge institutional performance. These efforts have been reinforced by the U.S. Department of Education's introduction of the College Navigator website, institutional scorecards, required disclosure reporting and expansion of federal data initiatives. In taking the next step in linking institutional performance data to sanctions through termination of participation in state financial aid, the Legislature should consider:

- a. The impact on Minnesota students,
- b. The inability to isolate the impact of institutional performance,
- c. Whether incentive/performance based models are effective in changing institutional behavior, and
- d. Duplication of other efforts.

a. Impact on Minnesota students

The withdrawal of financial aid to current students is an extreme action and even with notification far in advance of the action; the loss of financial aid can negatively impact student enrollment and completion which results in increased costs to the student. Forcing students to transfer in order to access financial aid may result in a loss in credits for the degree program and thus additional tuition and fees. Students with limited educational options (e.g. rural students) may not be able to access alternative postsecondary programs and thus the withdrawal of financial aid would become a significant roadblock to their college aspirations. It should also be noted, that publishing data on metrics alone may not cause students to make different college choices. Recent research indicates that students choose their institution based on costs including financial aid, location, and how well the college serves their needs during enrollment⁴.

The termination of low-performing institutions from state financial aid eligibility alone would not prevent these institutions from operating in the state. These institutions could still enroll students and collect tuition payments; however students would have restricted financing options and be more likely to seek out private student loans. Identifying criteria that could be used to determine institutional eligibility to participate in state financial aid programs creates overlap/duplication with the Office's regulation and licensure duties. Ensuring that the two areas operate in parallel is critical in order to provide clear expectations for institutions.

b. Inability to isolate the impact of institutional performance

It is important to understand that the provision of descriptive statistics regarding student and institutional outcomes does not equate to a full evaluation of institutions or any state financial aid program. True evaluation seeks to establish causation which the use of descriptive statistics cannot. A correlation between two variables does not necessarily imply that one causes the other (e.g. as tuition increases, cumulative debt increases). Correlation is not causation. The establishment of causation requires that researchers isolate the impact of institutional behavior on the outcome after controlling for all other

⁴ Meece, J. S. (2013). *Determinants of college choice for students attending two-year colleges in Wisconsin* (Doctoral dissertation, EDGEWOOD COLLEGE).

Iloh, C., & Tierney, W. G. (2014). Understanding For-Profit College and Community College Choice Through Rational Choice. *Teachers College Record*, 116, 080304.

possible variables. Establishing causation provides information on strategies for influencing the outcome desired.

c. Whether performance/outcomes based models are effective in changing institutional behavior

Much of the literature on performance funding models has yielded inconclusive results. Doyle and Noland's (2006) institution level study found that performance funding was related to increased student retention rates at a few institutions.⁵ While, Shin and Milton's (2004) study showed that institutions in states with performance based programs did not outperform institutions in states without performance based programs, over a five-year period.⁶ A more recent study of the Tennessee performance funding found that public institutions in Tennessee have not responded to the current monetary incentives created by the State's adoption of performance-funding policies (Sanford & Hunter, 2011).⁷ The use of retention and six-year graduation rates as a measure included in performance funding did not result in a statistically significant difference in the mean retention or six-year graduation rates at Tennessee institutions compared to their peers over the decade studied, even after monetary incentives were doubled.

Aligning eligibility for financial aid with institutional performance will likely have a strong impact on financial aid dependent institutions – public community and technical colleges, private institutions. However, it is uncertain whether the impact will be to improve performance or financially weaken these institutions.

For other institutions, state aid programs represent a small percentage of total financial aid offered by a college and thus the impact of termination of eligibility for state financial aid will likely result in fewer lower- and middle-income students enrolling but may have minimal impact for the institution overall.

d. Duplicative of other policy initiatives

Enactment of criteria for institutions to participate in state financial aid risks overlapping with several areas of institutional regulation including:

- i. Requirements to participate in state and federal financial aid,
- ii. Licensing and registration requirements for operating in Minnesota, and
- iii. The U.S. Department of Education's Postsecondary Institution Rating System (PIRS) initiative.

i. Requirements to participate in state and federal financial aid

Federal student aid programs authorized under Title IV of the Higher Education Act of 1965 provide grants, loans and work-study funds to eligible students enrolled in an institution. To participate in a Minnesota financial aid program, institutions must be participating in the federal Title IV. Among a long

⁵ Doyle, W. R. and Noland, B. (2006, May). Does performance-funding make a difference for students? Paper presented at the annual meeting of the Association for Institutional Research. Chicago, IL.

⁶ Shin J., & Milton, S. (2004). The effects of performance budgeting and funding programs on graduation rate in public four-year colleges and universities. *Education Policy Analysis Archives*, 12(22), 1-26.

⁷ Sanford, T., Hunter, J. M. (2011) Impact of Performance-funding on Retention and Graduation Rates *Education Policy Analysis Archives*, 19(33).

list of specific requirements for an institution to be eligible to participate in federal Title IV funding, the institution must be licensed or otherwise authorized by the state where it operates to offer a postsecondary education program. This means the Minnesota Office of Higher Education is not only the first gatekeeper of Minnesota institutional financial aid eligibility, but federal financial aid program eligibility as well. The institution must also be accredited by an accrediting agency recognized by the U.S. Department of Education. Accreditation standards provide the primary basis for assessing program quality.

ii. ***Licensing and Registration Requirements for Operating in Minnesota***

The Office is responsible for the program approval, registration, and licensing of private collegiate and career schools, under *Minnesota Statutes 136A.61 to 136A.71* and *Chapter 141*. Public institutions are exempt from licensure and registration. The Private Career School Licensure Act under *Chapter 141* regulates private schools and training firms offering occupational programs below the associate level in Minnesota. Among the many requirements to obtain a license to operate in Minnesota, the quality and content of each occupational course or program of study provides education and adequate preparation to enrolled students for entry-level positions in the occupation for which prepared. *Minnesota Statutes 136A.61 to 136A.71* regulates institutions offering an associate degree or higher. Among the many requirements, degree program approval requires that the institution has developed appropriate education programs leading to each degree for which approval is sought. The institution must also be accredited by an agency recognized by the U.S. Department of Education for the purpose of eligibility to participate in Title IV federal financial aid programs. There is a five year window for new institutions to receive the accreditation.

iii. ***The U.S. Department of Education's Postsecondary Institution Rating System (PIRS) initiative***

In fall 2013, the U.S. Department of Education announced an initiative to create a Postsecondary Institutions Rating System (PIRS).⁸ The Department released a new proposed version of PIRS in December 2014⁹. The plans follow an extensive array of hearings and consultations by the Department. In announcing the new PIRS framework, the Department stated that the rating system is intended to identify institutions that provide “good value,” focusing on access, affordability and student outcomes. The initial data reports are anticipated to be released by July 2015. While the President is expected to propose allocating a portion of federal financial aid based upon these college ratings as part of the upcoming reauthorization of the Higher Education Act, the U.S. Department of Education anticipates an additional five years of work in determining final benchmarks. PIRS utilizes the same goals as outlined by the Office: access, affordability and student success. Many of the contextual metrics are also identical (Percent Low Income, Net Price, Completion, Employment).

If the U.S. Department of Education succeeds in linking federal financial aid to rating, Minnesota law would follow suit. Minnesota statute currently requires institutions to maintain eligibility for Title IV federal financial aid as a prerequisite for receiving state financial aid. It would be critical to ensure alignment between federal and state standards to provide clarity for students and families. Differing criteria could create a situation in which a student would be able to access federal grants and loans but not state financial aid, creating confusion for prospective students.

⁸ Federal Register, Vol. 78, No. 242, December 17, 2013, page 76289.

⁹ <http://www.ed.gov/news/press-releases/public-feedback-college-ratings-framework>

Appendix A: Institutional Comparisons

There are over 200 public and private postsecondary institutions operating in Minnesota. From urban to rural, big to small, public to private, Minnesota's postsecondary institutions offer students a variety of choices. Metrics of institutional quality or performance often assume that all institutions are created equal, at least in a measurement sense. But this is a false premise; a great amount of institutional diversity exists within higher education. Accurately comparing colleges and universities requires knowledge about the factors that distinguish institutions from one another. Without such understanding it is often unclear what are the best ways to compare and contrast higher education institutions.

Institutional Diversity

Institutional mission

Higher education institutions serve different missions. Some institutions prepare students for specific careers (e.g. cosmetology schools) while others, such as liberal arts programs, focus on critical thinking and problem solving. Some institutions offer a select group of degree programs (Minneapolis College of Art and Design), while others are comprehensive universities (Minnesota State University, Moorhead) attempting to provide high quality programs in many areas. Missions vary by institutional type and purpose, such as vocational programs and research institutions. Differing missions lead to differences in how credit hours are allocated within programs, the time to degree completion by program, the intensity (depth and breadth) of student services offered, the ratio of faculty to students, and the overall cost of instruction. Thus, comparisons should be made with consideration for the mission of each institution involved.

Higher education institutions' admissions policies, another aspect of institutional missions, greatly impact how one might think about institutional comparisons. Within the state of Minnesota, there is a large range in institutional selectivity, including open enrollment institutions. The admissions policies of an institution are significant when categorizing and comparing institutions. An institution with selective admissions policies enrolls students with a broader foundation of academic skills, thus these institutions may outperform open enrollment institutions in certain outcomes simply because of their student population characteristics.

Research I institutions, such as the University of Minnesota, Twin Cities, for example, place a heavy emphasis on research for faculty and students, and direct resources to creating opportunities for participation in research. While other four-year institutions may conduct research, they are more likely to emphasize the teaching and learning aspects of their mission. Therefore, understanding the role of research and teaching in an institution's mission is essential when comparing, for example, the number of grants received from the National Science Foundation, which provides extensive funding to universities in the form of research grants.

Population served

Tribal colleges, career colleges and those with high non-residential and older students have unique populations that warrant consideration when conducting general comparisons. In some cases, student populations may be synonymous with institutional mission, for example tribal colleges or historically black colleges and universities. For example, Metropolitan State University has an older, part-time population of students and should not be compared to the University of Minnesota, Twin Cities on measures such as six-year graduation rates. The majority of Metropolitan State University graduates take longer than six years to complete their degrees.

Program offerings

The National Center for Education Statistics provides information on program offerings and enrollment through its College Navigator tool (nces.ed.gov/collegenavigator). Each institution has a dedicated page; the “Programs/Majors” tab breaks down awards conferred by program during the most recent academic year for which data is available. While not always in perfect alignment with a school’s nomenclature for degree offerings, the site breaks down awards conferred by categories and more detailed subcategory e.g. “Biological and Biomedical Services – Epidemiology.” The award level is also disaggregated.

By analyzing program offerings, a clearer picture emerges of an institution’s foci and specializations. This “institutional reality” can then be compared to the goals articulated in the school’s official mission statement, which is typically published on its website and in its course catalog, and policymakers can better understand where an institution fits in Minnesota’s landscape of higher education.

Size & Location

Size and location of an institution impact the amount and type of opportunities available to students in and around the institution, and institutional partnerships. Within Minnesota, institutional sizes and locations vary greatly, as does Minnesota’s population distribution. The Twin Cities is the primary urban area of Minnesota; as such, it may be optimal to compare distance from an urban area and population when categorizing institutions. Size, too, has the potential to define a student’s college experience; class size, level of interaction with professors, and campus culture may be impacted by institutional size.

Conclusion

Comparative data can act as benchmarks for assessing the well-being of an institution and can enable the state to identify areas of improvement (Xu, 2008; Lang, 1999). Meaningful analysis of data across institutions hinges on successfully creating comparison groups. Peer groups consist of institutions that are similar in mission, programs, size and students. The Integrated Postsecondary Education Data System (<http://nces.ed.gov/ipeds/datacenter/>) enables the creation of robust peer groups through the use of its “compare individual institutions” function. Once a “Comparison Institution” is selected, the “EZ Group” function allows schools with similar characteristics to be identified within the state. Useful categories include: sector; institutional category; basic Carnegie classification (2010); and institution size category.¹⁰ The peer groups selected should be reviewed with individual colleges to ensure their reliability.

Another approach to comparative data is to track a single institution over time and compare data longitudinally. Failure to create appropriate comparison groups results in a lack of context, without which meaningful conclusions cannot be derived from collected data.

¹⁰ Its Carnegie Classification and Land Grant status make the University of Minnesota’s Twin Cities campus unique among four-year institutions within the state; however, comparison by size, location, and degree programs offered remains viable. The University of St. Thomas represents an example of a possible in-state peer institution, as revealed by an IPEDS comparison defined by these metrics.

Appendix B: Metrics Defined

The Office suggests 9 metrics for discussion in this report per the legislative mandate. The metrics chosen relate directly to the goals and priorities discussed in the introduction of this report:

1. Ensure access
2. Ensure affordability
3. Ensuring quality of educational programs as measured by student success

Each metric provides the following information

- Metric overview and background
- Metric definition/calculation
- Data elements and sources
- Context for metric and its use
- Limitations and caveats
- Use of this metric for participation in state financial aid

Access

Measures of how well Minnesota's postsecondary education system is serving individuals in need of upward economic mobility.

METRIC 1: Enrollment of key populations

Overview

During fall 2013, 282,674 undergraduate students (69 percent of all 440,632 students) enrolled in a Minnesota postsecondary institution. In terms of measuring access, the three undergraduate populations traditionally underrepresented in postsecondary education are lower income, students of color, and age 25 or older. These populations are of central importance to increasing Minnesota's educational attainment and assisting the state in meeting future workforce demands.

What is this metric intended to measure? This metric measures how well Minnesota's higher education system is serving individuals in need of upward economic mobility.

Do institutions have direct influence over the outcomes of this metric? Yes. Institutions know the financial background and demographic characteristics of their admitted students. Institutions should know their capacity to address the challenges of their students listed below to assist them in successfully enrolling in and completing college.

Lower Income Undergraduates

For lower-income populations, obtaining a higher education credential (certificate or degree) is a critical step to moving out of poverty and into family-sustaining jobs. Unfortunately, lower-income students often encounter multiple challenges when it comes to postsecondary education, including insufficient academic preparation in K-12, lack of family experience with postsecondary education, lack of financial resources and misperceptions about financial aid.

The purpose of state financial aid is to help lower-income students gain access to higher education and targets monies to students based on income and financial need.¹¹ Financial aid policies should also align with other state and institutional policies geared toward student success (e.g. transfer articulation).

Minnesota undergraduates from families with incomes less than \$30,000 and those from families with incomes in the \$30,000 to \$60,000 range were more likely to attend public two-year institutions than public or private four-year institutions (NPSAS, 2008). Also, 36 percent of lower-income students had parents whose highest level of education included no college compared to 15 percent of students from higher income families.¹²

In a study of 1992 high school graduates, 94 percent of low-income students (defined as those with less than \$25,000 in annual family income) planned to pursue postsecondary education. By 1994, only 64 percent had actually enrolled. For high-income students (those with \$75,000 or more in annual family income) 99 percent planned to enroll and 93 percent did enroll by 1994 (Choy, 2002, p. 11). Although college access has improved for low-income students, enrollment increases have not kept pace with gains of higher income students.

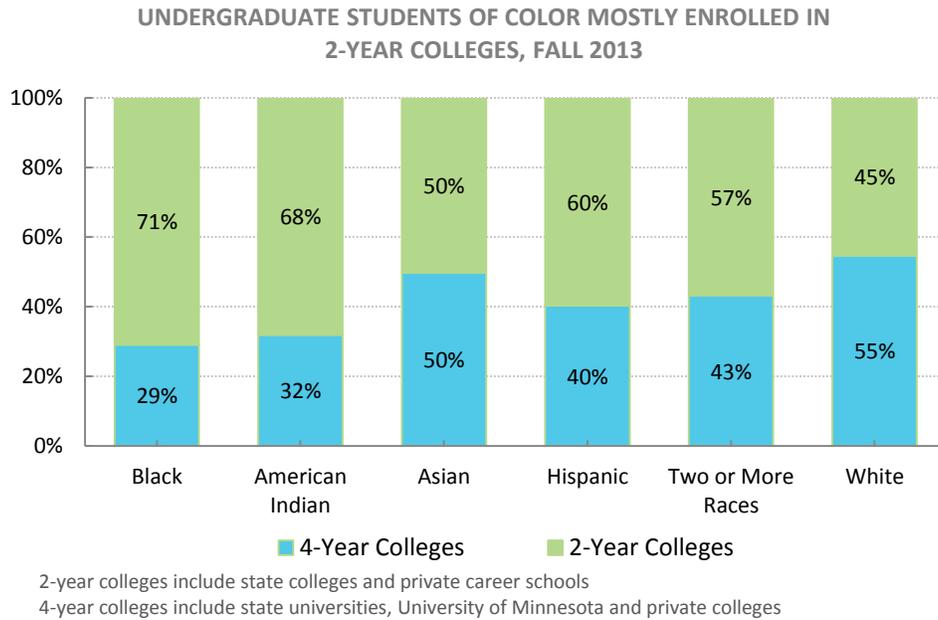
¹¹ Minnesota Office of Higher Education. (2008). *Enrollment Patterns of Students from Low-Income Families*. Retrieved from <http://www.ohe.state.mn.us/pdf/EnrollPatternsLowIncome.pdf>

¹² National Center for Education Statistics, National Postsecondary Student Aid Study 2004.

Students of Color

Key indicators at each stage of the education pathway demonstrate that Minnesota’s students of color do not share the same outcomes in the state’s postsecondary education system as their White peers.

Enrollment by students of color has grown by 11 percentage points over the past ten years, from 13 percent to 24 percent. During that same period, the percentage of White students decreased by 11 percentage points.



Source: Minnesota Office of Higher Education

Even though the number of undergraduates of color increased, they are not enrolled in the same type of institutions equally. In fall 2013, American Indian, Asian, Black and Hispanic undergraduates attended two-year institutions at rates higher than Whites. Of enrolled Black students, 71 percent attended two-year institutions compared to four-year institutions, the highest percent of all racial/ethnic groups. Stratification in enrollment means that fewer students of color earn associate and bachelor’s degrees as compared to White students.

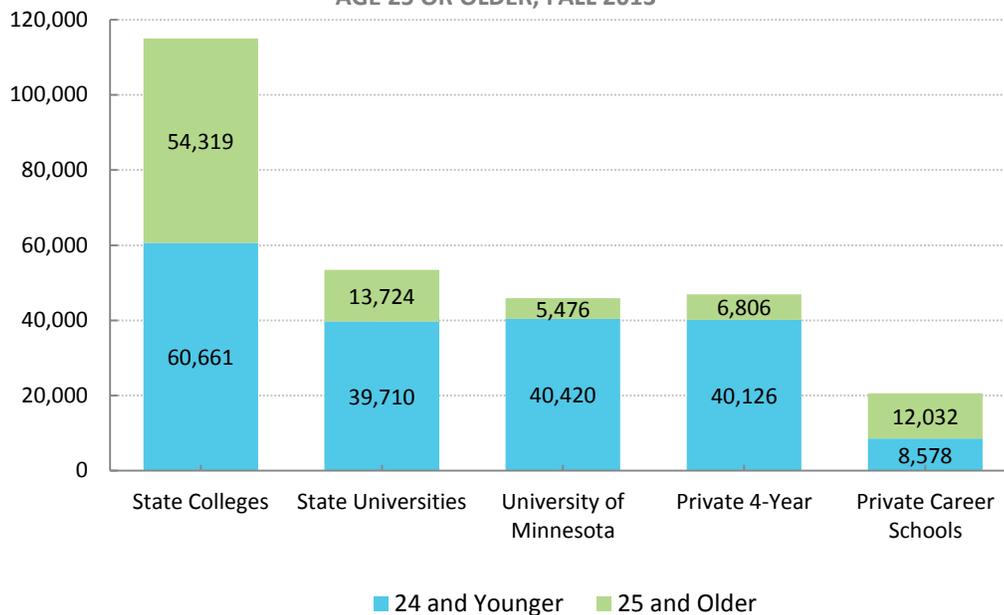
Undergraduates Age 25 or Older

Undergraduates age 25 or older lacking an educational credential are at a disadvantage in the workforce.

During the previous 10 years, the number of undergraduates age 24 and younger enrolled in postsecondary programs increased by three percent, compared to a 40 percent increase in enrollment of undergraduate students age 25 or older.

While undergraduates aged 25 or older comprised a smaller percent of undergraduates (36 percent) compared to those 24 or younger, undergraduates aged 25 or older enrolled in two-year institutions (62 percent) at higher percentages than four-year institutions (38 percent). Undergraduates age 25 or older contributed to the majority of undergraduate enrollment growth during the past decade at two-year institutions.

**UNDERGRADUATES ENROLLED AT 2-YEAR COLLEGES ARE MOSTLY
AGE 25 OR OLDER, FALL 2013**



Does not include high school students.

Source: Minnesota Office of Higher Education

Definition: The number of undergraduates with target characteristics (income, race and age) divided by the number of undergraduates.

Data for Metric: Institutions participating in state financial aid programs submit fall-term enrollment data to the Office. The data include students' age and race/ethnicity. Institutions participating in the Minnesota State Grant program submit applicant data, including financial background of students and their families.

Context for Metric and Usage: Family income, race/ethnicity and age impact the postsecondary institution a student chooses to attend, but enrollment data on these student characteristics are not a measure of institutional quality or performance. Enrollment data; however, can be used to provide information about the ability of key student groups to access postsecondary education and succeed at their enrolled institution.

Limitations and Caveats:

High School Students

Students of color and lower-income students graduate from high school at lower rates reducing their possible participation in postsecondary institutions. While racial disparities appear early in a child's educational journey, the postsecondary achievement gap in Minnesota is directly affected by the disparities in high school graduation rates between White students and students of color in Minnesota public high schools. The 2013 four-year graduation rate for Black students, for example, was 27 percentage points lower than the rate for White students. Only 64 percent (14,704 students) of students eligible for free/reduced price lunch graduated in four years from high school.

College Readiness

Indicators related to college readiness greatly affect postsecondary achievement, and show differences in preparation by race. Lower-income students also are less likely to meet both the math and reading standards than were other students in high school, and students who fail to meet the high school

graduation standards are also less likely to be prepared for postsecondary-level coursework. Most notably, 50 percent of Black public high school graduates enrolled in developmental education in 2013, compared to 19 percent of White students.

Student Demographics

Students from underrepresented groups in Minnesota tend to come from lower-income families. Increasing numbers of lower-income students attend two-year as opposed to four-year institutions. National research points to this distribution in enrollments by income as the increasing stratification in higher education. With the economic importance placed on attaining a four-year degree and students starting at a two-year institution being less likely to complete a bachelor's degree (Choy, 2002), this shift has raised some concerns.

Changing Financial Aid Parameters

Both the federal Pell Grant and the Minnesota State Grant receipt serves as a proxy for family income. However both programs have expanded eligibility over the most recent decade. Therefore a student with a family adjusted gross income of \$65,000 may qualify for federal Pell Grant now but would not have qualified in 2007; thus creating problems in analyzing patterns in enrollment by income over time.

Institution Type

Policies regarding who is eligible to receive a grant or scholarship vary greatly by institution type and year. Minnesota students from families with incomes of less than \$75,000 may be eligible to receive federal Pell Grants, Minnesota State Grants and institutional need-based grants. Analysis of the net price of tuition and fees for this income group allows for better understanding of the impact of state, system or institution specific policies on reducing educational costs. Lower income students may need to rely more heavily on loans to finance their higher education if they attend institutions that cannot supplement gaps in federal or state grants with institutional grants.

Part-Time vs. Full-Time Attendance

Minnesota undergraduates that are older or lower-income are less likely to enroll full-time. Full-time enrollment is highly predictive of college completion and timely graduation. Recent analysis from the National Student Clearinghouse (2013) showed that among students entering college for the first time in 2007, 66 percent of full-time students completed a degree or certificate within six years as compared to 19 percent of part-time students. A significant portion of part-time students (67 percent) had left college by year six without completing a degree or certificate.

Use of this Metric for Participation in State Financial Aid:

Possible Benchmark

This data (low income, students of color and age 25 or older populations) is meant to provide context about the populations served by Minnesota institutions. No benchmark using this data has been established although selective institutions (both private and public) have been criticized for their commitment to serving lower-income students as measured by the percentage of enrolled undergraduates receiving federal Pell Grants at these institutions.

Affordability

College affordability impacts both college access and completion. The best available method for evaluating college affordability is the net price paid by students and families. Net price reflects the out-of-pocket costs students pay for college after subtracting grants and scholarships awarded. In addition to varying by institution, net price also varies by family income and serves as a base for understanding the use of student loans.¹³ As students' net prices have increased, students and families have increasingly relied on student loans to pay for college. The following metrics attempt to measure how well federal, state, and institutional policies ensure that college is affordable for all Minnesota students.

METRIC 2: Net Price

Overview

What is this metric intended to measure? Average net price compares the out-of-pocket costs for students by institution attended. Tuition and fees represent only a portion of the costs students face while pursuing a postsecondary education. In addition to tuition and fees, the true cost of attendance includes non-tuition expenses such as room and board, transportation, personal expenses and books. These non-tuition expenses often exceed tuition and fees. Net price reflects the out-of-pocket costs paid by students after grants and scholarships have been applied.

The Higher Education Opportunity Act of 2008 mandated that institutions post net price calculators on their college websites, the reporting of net price data to the U.S. Department of Education (DOE) and the creation and posting of “College Affordability and Transparency Lists” by the Department. These lists highlight institutions with the highest and lowest tuition and fees, net prices and percent changes in them, within their sectors (Public Law 110-315, Sec. 111, August 14, 2008). Since then, President Obama charged DOE with creating a college rating system to better inform families and hold institutions accountable for their performance. Though the rating system is not complete, DOE’s proposed measures of affordability, include net price and net price by income quintile.¹⁴

Do institutions have direct influence over the outcomes of this metric? Somewhat given that institutions set their tuition, but the measure also reflects the tapestry of funding involved. Net price increases when Pell Grants or State Grants are reduced, which is outside of institutional control. Analysis of net price for this income group (families with incomes of less than \$75,000) allows for better understanding of the impact of state or system specific policies on reducing educational costs.

Data for metric:

Net price calculations are based on data from the IPEDS Student Financial Aid Survey and IPEDS Institutional Characteristics Survey. All colleges and universities participating in federal Title IV financial aid are mandated to have net price calculators on their website to allow prospective students to determine the average net price paid by students with similar backgrounds attending the institution in prior years.

Definition:

The Office proposes two variations of the net price metric for consideration:

¹³ Net price is affected by a student’s eligibility for need-based and merit-based financial aid. Minnesota students from families with incomes of less than \$75,000 are generally eligible to receive federal Pell Grants, Minnesota State Grants, or institutional need-based grants.

¹⁴ U.S. Department of Education. (2014, December 19). *A New System of College Ratings – Invitation to Comment*. Retrieved from <http://www2.ed.gov/documents/college-affordability/framework-invitation-comment.pdf>

Net Price by Income \$75,000 and Under

Net price is calculated as the sum of tuition, fees and living expenses less grant aid divided by the number of students in the cohort. Only students whose family incomes were \$75,000 and under would be included to isolate the measure to populations targeted by state financial aid programs.

Alternative

Net price could be calculated across all income bands for a more nuanced understanding of how the combination of aid policies impact the average student.

Limitations and Caveats:

Limited Student Population Analyzed

Only first-time full-time undergraduate students who received Title IV financial aid are included in the calculation. At some institutions, the number of first-time full-time students receiving Title IV financial aid is small, particularly at institutions that attract non-traditional students who may have enrolled in college previously. Institutions with small first-time full-time cohorts could experience tremendous variance in net price year to year.

Additionally, while low cost institutions may experience a large percentage change in net price, they may only exhibit a relatively small dollar change. The calculation also does not include students whose families pay the full-price for college. These factors would influence institutions' net price metric in unpredictable ways. Further, improvements in net price may reflect changes in federal financial aid policies rather than an institution's performance. Interpretation of this metric would need to be contextualized and nuanced.

Use of this Metric for Participation in State Financial Aid:

Costs associated with college attendance continue to be a concern for students, families, and policymakers. Net price calculators and watch lists can help to keep out-of-pocket costs at the forefront of conversations on college access. Due to the number of influences on net price outside of an institution's control, and the measure's ability to provide a valid measure of institutional performance, this metric is best used at the system and state level.

METRIC 3: Cumulative Debt

Overview

In recent years, cumulative student loan debt has received increased attention from policymakers and researchers. According to the Consumer Financial Protection Bureau, total student loan debt in the United States has passed one trillion dollars; Americans now owe more on their student loan debt than they do on credit card debt.¹⁵ Students with high debt may experience financial hardships, feel burdened by their student loan payments or delay other investments.¹⁶

What is this metric intended to measure? This metric compares the cumulative amount borrowed by students at graduation across award levels and institutions.

Do institutions have direct influence over the outcomes of this metric? Somewhat; student borrowing is largely governed by federal financial aid policies. For students needing to borrow more than federally defined maximums, access to non-federal loans is governed by credit standards. Cumulative borrowing, like net prices is a metric of the effectiveness of state and federal financial aid policy.

Data for metric:

The Minnesota Office of Higher Education collects institution level data on cumulative student loan debt of Minnesota graduates by award level. As of January 2015, the Office is in the process of collecting data from institutions for the 2013-2014 academic year. Data from 2010-2011, 2011-2012, and 2012-2013 is available at: <https://www.ohe.state.mn.us/pdf/CumulativeStudentLoanDebt11-13.pdf>.

Cumulative student loan debt is defined as the postsecondary institution's median student loan debt for all borrowers from all federal, state and private sources known to the institution, excluding federal Parent PLUS loans for undergraduates.¹⁷ Students who graduated with no debt are not included in the median. Additionally, if a student incurs debt from a previous institution, the debt from the previous institution is not included.

Definition:

Cumulative student loan debt: the median student loan debt incurred by graduates. Debt incurred from previous institutions is not included. The debt figures include debt from federal, state and private sources known to the institution. Students with no debt are not included in the median.

Context for Metric and Usage:

While high debt levels have led some policymakers and researchers to pursue sanctions against institutions, the U.S. Department of Education has stated they will not be using cumulative debt as a metric given its disproportionate impact on institutions that enroll a high percentage of lower-income students.

Research is mixed about whether high levels of debt is correlated with default. Choy and Li (2006) indicated that students with high levels of student loan debt also have higher levels of default,¹⁸ while

¹⁵ Nelson, L. A. The New Politics of Student Loan Debt. *Inside Higher Ed*. Retrieved from: <http://www.insidehighered.com/news/2012/05/03/how-student-debt-became-focus-presidential-campaign>

¹⁶ Hendel, M. *Research in Depth* (2011). Retrieved from: <http://www.studentloan.org/Docs/Research/2011July.pdf>

¹⁷ Parents or guardians of the student are responsible for any debt incurred through Parent PLUS loans.

¹⁸ Choy, S.P., & Li, X. (2006). *Dealing with debt: 1992-1993 bachelor's degree recipients 10 years later*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

others observe that defaulters usually have low levels of student loan debt.¹⁹ Hillman (2014) found that students who borrow very little do not typically default on their loans and those who borrow for a few years default at higher rates. Those who borrow for more than a few years presumably complete their degrees and demonstrate a lower risk of default.²⁰

Limitations and Caveats:

Relationship between Debt and Default

Based on research mentioned above, institutions with high median cumulative student loan debt levels may actually have low levels of student loan default. While the debt incurred by students may be burdensome, higher debt may still be a good investment for the student provided they do not enter default on their loans. Minnesota has default rates that are low relative to the nation, despite having the third highest average student loan debt in the nation.

Tuition Variance

Institutions that charge higher tuition rates may demonstrate higher levels of median cumulative debt. However, outcomes for graduates of these institutions are not necessarily negative. The relationship between debt levels and employment outcomes is not clearly defined. Students from high debt institutions may experience better outcomes than students from lower debt institutions, making a benchmark based on debt levels potentially problematic.

Noncompleters

Both sources of data mentioned above collect figures on debt for degree recipients. Many students who default on their loans and experience other negative outcomes related to their student debt did not complete a degree. Data on these students is not reported at the institution level.

Student Income Variance

High debt levels at some institutions may be more a function of student characteristics at that institution rather than institutional effectiveness. For example, Carleton College charges relatively high tuition for bachelor's degree seekers in the state, but displays a relatively low median cumulative student loan debt. The likely explanation for this high-tuition, low-debt phenomenon is Carleton students' high family incomes relative to other bachelor's degree seekers in the state. If debt levels were a criterion for participation in state student aid, institutions that serve as an access point for traditionally underrepresented students in higher education could be penalized for higher debt levels simply because they are serving a population that needs to borrow more to finance their postsecondary education.

Use of this Metric for Participation in State Financial Aid:

No research-based benchmarks have been developed for cumulative student loan debt. For financial aid advising purposes, students are generally counseled to not borrow more than they expect to earn in their first year after graduation. In December 2014, the U.S. Department of Education noted that they would not be using cumulative debt as a measure of institutional performance due to concerns that this measure penalized institutions serving a high number of lower income students.²¹

¹⁹ Woo, J.H. (2002). Factors affecting the probability of default. *Journal of Student Financial Aid*, 32(2), 5-23.

²⁰ Hillman, N.W. (2014). College on Credit: A Multilevel Analysis of Student Loan Default. *The Review of Higher Education* (37)(2), 169-195.

²¹<http://www2.ed.gov/documents/college-affordability/framework-invitation-comment.pdf>

Student Success

Student success includes measures of how well an institution is moving students through the educational pathway and post-enrollment outcomes measures. The predominant reason for measuring post-enrollment outcomes is to ascertain whether students are achieving long-term financial sustainability.

Persistence and Completion

METRIC 4: Persistence

Overview

What is this metric intended to measure? Persistence serves as a leading indicator of completion. Persistence is defined as the percentage of new entering students who continue their education at any institution or complete their certificate or degree program. Persistence can be measured at multiple points in time. Persistence can also be measured for key subgroups of students (state grant recipients, Pell grant recipients).

Do institutions have direct influence over the outcomes of this metric? Yes; though the student has primary influence over the decision to re-enroll.

Data for metric:

The Office has matched data from multiple databases (OHE Enrollment data, OHE State Grant data, National Student Clearinghouse enrollment and graduation data, OHE Completion data) to create a full record of enrollment and completion activity for Minnesota resident undergraduates enrolling in Fiscal Year 2005 or later. This database, known as the statewide longitudinal educational database (SLEDS) allows the Office to assess the persistence and completion rates of new entering resident undergraduates at multiple points in time and across institutions.

Definition:

Students are placed into a first-term of entry cohort (all students) and a new transfer students' cohort (if transferring)

Numerator = Number of students in cohort still enrolled or having completed an award anywhere at 12 month intervals (12 months, 24 months, 36 months, etc...)

Denominator = Number of students in cohort

Context for Metric and Usage:

First-to second year persistence can be an indicator of student satisfaction with an institution or higher education in general. Students may not return for a wide range of reasons. Some students do not initially find the right institutional fit, or may be underprepared for college or have other family or personal circumstances which cause them to withdraw from college. Research has highlighted student characteristics (e.g. race/ethnicity, socioeconomic status, age, family) as predictive of institutional retention and student persistence.²² Affordability and academic success are also factors in the persistence discussion. The complexity lies in untangling these inter-related factors in an attempt to address each respectively. Included in this complexity are the choices which students make about when and how to pursue higher education (delayed enrollment, working while enrolled, attending part-time, and living off campus).

²² Adelman, C. (1999). *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*. Washington, DC: US Department of Education Office of Educational Research and Improvement.

Limitations and Caveats:

Cohort Size

Cohort size is of concern for two reasons. This metric requires that the institution have a sizeable population of first-time students in order to accurately assess persistence.

Transfers

Also, this metric looks at first-to-second year persistence at any institution, so institutions with a high number of students transferring out are not penalized.

Excludes non-resident students

The data collected for non-resident students is not complete. As such the Office excludes non-resident students from reporting.

Requires continued work with institutions

The data collection and reporting is new. As such the Office will continue to work with institutions to validate the data reported

Use of this Metric for Participation in State Financial Aid:

There is no research-based or commonly defined benchmark for persistence. It is more frequently used by institutions to monitor their year-to-year success in retaining students.

METRIC 5: Progress to Degree

Overview

What is this metric intended to measure? Progress to degree serves as a leading indicator of completion and is more detailed than the persistence measure previously discussed. The progress to degree metric compares the percentage of students passing established credit percentage thresholds yearly, based on standardized degree credit totals.

Do institutions have direct influence over the outcomes of this metric? Yes. Institutions affect credit accumulation through numerous channels. These include, but are not limited to, structural decisions regarding degree requirements and curricular design, and student support in the form of academic advising and student affairs programming. It should be noted that the student has primary influence over the decision to enroll.

Data for metric:

The Office has matched data from multiple databases (OHE Enrollment data, OHE State Grant data, National Student Clearinghouse enrollment and graduation data, OHE Completion data) to create a full record of enrollment and completion activity for Minnesota resident undergraduates enrolling in Fiscal Year 2005 or later. This database allows the Office to assess the persistence and completion rates of new entering resident undergraduates at multiple points in time and across institutions.

Success in keeping students “on track” to certification can be measured by the percentage of students passing established credit percentage thresholds year-by-year, based on standardized degree credit totals. This metric will require that entering students be disaggregated by initial degree at time of enrollment.

Definition:

Students are placed into a “First Term of Entry” cohort (all students) and a “New Transfer Students” cohort (if transferring).

Numerator = Number of entering students meeting the credit threshold

Denominator = Total number of entering students

For Minnesota, these tracked thresholds will be as follows:

Associate	Credit Threshold 1	Credit Threshold 2
12 months after entry	25% (15 of 60 credits)	50%
24 months	75%	100%
Baccalaureate	Credit Threshold 1	Credit Threshold 2
12 months	12.5% (15 of 120 credits)	25%
24 months	25%	50%
36 months	50%	75%
48 months	75%	100%

Context for Metric and Usage:

Early accumulation of college credits has been identified as an important means to improve degree completion. More credits earned in the first and second years lead to higher degree completion rates.²³ McCormick & Carroll (1999) found that 91 percent of students who earned 30 credits in the first year completed their degrees, while only 45 percent of those who earned fewer than 20 credits in the first year did so.²⁴ This result applies to not only students in four-year institutions, but also those in community colleges. According to Roksa and Calcagno (2008), the students in Florida's community colleges who earned more than 24, 36, and 48 semester credits in three credit thresholds were more likely to transfer to a university.²⁵ Many of the variables that affect student persistence, such as enrollment status (full- vs. part-time) and employment, also impact credit accumulation.

Limitations and Caveats:

Non-inclusion of “incidental” students

Researchers studying credit accumulation as an indicator of completion often exclude from their data those students who complete below a set number of credits. Factoring out this cohort of “incidental” students is done to eliminate students who had no intention of transferring or earning a degree. We are considering limiting our data to students with 12 or more credits completed. Eliminating students below 10 or 12 credits represent typical cutoffs for degree accumulation studies.²⁶ Incorporating this parameter makes tracking students seeking certificates more difficult; however, credit accumulation is traditionally examined in order to monitor longer-term degree seekers.

Remedial Coursework

Students generally do not receive credit for the completion of remedial courses. This fact can result in students enrolled in such coursework failing to meet established credit thresholds. Remedial coursework is sometimes identified as a hindrance to degree completion.²⁷ Other research suggests that, while not appearing to significantly affect graduation rates at two-year institutions, the effect of remedial coursework on graduation rates at 4-year institutions is more complex – factors such as the course subject (math, writing, etc.) and whether or not a student passes remedial coursework play a role.²⁸

Use of this Metric for Participation in State Financial Aid:

No research based benchmark exists for progress to degree. Determining what percentage of students need to meet those thresholds for an institution to be considered low or high performing would need to be evaluated.

²³ Moore, C. & Shulock, N. (2009). Student progress toward degree completion: Lessons from the research literature. Sacramento, CA: Institute for Higher Education Leadership & Policy.

²⁴ McCormick, A. C. & Carroll, C. D. (1999). Credit production and progress toward the bachelor's degree: An analysis of postsecondary transcripts for beginning students at 4-year institutions. Washington, DC: U.S. Department of Education.

²⁵ Roksa, J. & Calcagno, J. C. (2008). Making the transition to four-year institutions: Academic preparation and transfer (CCRC Working Paper No. 13). New York: Columbia University, Teachers College, Community College Research Center.

²⁶ Examples are discussed in Roksa & Calcagno (2008), pp. 9, 11.

²⁷ Complete College America. (2006). *Remediation: Higher education's bridge to nowhere*. Indianapolis, IN. Retrieved from: <http://www.completecollege.org/docs/CCA-Remediation-final.pdf>

²⁸ Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence on college remediation. *The Journal of Higher Education*, 77(5), 886-924.

METRIC 6: Completion

Although there are myriad factors that contribute to a student's ability to complete a college degree, college completion remains a high priority in higher education. Of the cohort of students who entered into higher education in 2006, 59 percent had completed a degree within six years.²⁹ Institutions can implement a variety of student support services in an attempt to improve completion rates. The bottom line is that a college degree simply is not affordable if a student does not complete. Therefore, college completion is an issue that encompasses affordability and workforce demands and thus is an important institutional metric.

What is this metric intended to measure? Completion measures degree or certificate attainment of students, and the rates at which specific institutions' students attain degrees or certificates. Completion is defined as the percentage of students who complete their certificate or degree program at any institution. Completion can also be measured for key subgroups of students (state grant recipients, Pell grant recipients).

Students are grouped by cohort based on their first term as a degree-seeking student. Enrollment and completion data obtained from four data sources (OHE Student Enrollment database, OHE Higher Education Completion data, State Grant Applicant data, and National Student Clearinghouse) are matched using personal identification information.

Do institutions have direct influence over the outcomes of this metric? Yes; though the student has primary influence over the decision to complete his/her program.

Data for metric:

The Office has matched data from multiple databases (OHE Enrollment data, OHE State Grant data, National Student Clearinghouse enrollment and graduation data, OHE Completion data) to create a full record of enrollment and completion activity for Minnesota resident undergraduates enrolling in Fiscal Year 2005 or later. This database allows the Office to assess the persistence and completion rates of new entering resident undergraduates at multiple points in time and across institutions.

Definition:

Students are placed into a first-term of entry cohort (all students) and a new transfer student cohort (if transferring)

Numerator = Number of students completing a credential at chosen time point (1 year, 2 years, 3 years, etc...)

Denominator = Number of students in cohort

Context for Metric and Usage:

Completion can be an indicator of a student's ability to navigate a higher education institution in general, or it may reflect the culture and student support services of a particular institution. Similar to research on institutional retention and student persistence, student characteristics (e.g. race/ethnicity, socioeconomic status, age, family) are predictive of completion rates. These factors remain intertwined and thus the challenge lies in disaggregating factors in order to better understand how to support students towards college completion. In addition, as completion is measured by specific degrees sought,

²⁹ National Center for Education Statistics. (2014). *Institutional retention and graduate rates for undergraduate student*. Retrieved from http://nces.ed.gov/programs/coe/indicator_cva.asp.

it may be challenging to untangle the experience of students who attend various institutions prior to completion.

Limitations and Caveats:

Cohort Size

Cohort size is of concern for two reasons. This metric requires that the institution have a sizeable population of students in order to accurately assess persistence.

Excludes non-resident students

The data collected for non-resident students is not complete. As such the Office excludes non-resident students from reporting.

Student intent

This metric assumes that all students seek to complete an established program. Many students enter higher education for specific training opportunities that do not require completion of a full program, though financial aid policy discourages this type of enrollment.

Requires continued work with institutions

The data collection and reporting is new. As such the Office will continue to work with institutions to validate the data reported.

Use of this Metric for Participation in State Financial Aid:

No research-based benchmark exists for completion. Ideally, efficient higher education systems would have a high percentage of students completing their program of study.

Employment Rates of Graduates

There is increased focus on student success and outcomes after leaving higher education. This can be attributed to increased demand for return on investment information, and questions about how well colleges are supplying workers with needed skills.

One method of measuring return on investment is to measure the employment of graduates. Tracking the employment of postsecondary graduates has not been uniform. Historically, employment rates for bachelor's recipients at the national level result from surveys of graduates using random sampling methods. While presenting an accurate snapshot of employment rates, comparing differences in employment rates over time can prove problematic as different surveys over different time periods use different methodologies for sampling cohorts of graduates. Many programs at institutions do voluntarily survey their own graduates but broad-based measures of employment rates across undergraduate programs have not been common. In addition, voluntary institutional surveys are plagued by limited response rates and difficulty in tracking over time.

As a result of the creation of statewide longitudinal data systems and increased data sharing among workforce agencies and education programs, employment rates of graduates can now be tracked over time with greater detail after students have left their institution of higher learning.

METRIC 7: Percent Employed Year Round

Overview

What is this metric intended to measure? The extent to which graduates successfully transition to employment after graduation. An alternative measure would be the extent students are achieving full-time employment as this more closely relates to long term financial stability.

Do institutions have direct influence over the outcomes of this metric? Somewhat. Academic preparation should be related to employability. Well informed college career services can influence this outcome by helping graduates with resume preparation and providing job fairs. Postsecondary institutions can also help students by providing information about what types of careers are related to academic majors/programs. Institutions cannot control the larger economy or specific employer demands.

Data for metric:

Data on college completers comes from the Office of Higher Education and Unemployment Insurance (UI) wage detail records are obtained from the Minnesota Department of Employment and Economic Development (DEED). Graduate information is matched to unemployment insurance wage detail records provided by DEED. Matching the two data sets requires consistency in reporting personally identifiable information, including name and social security number, by both state agencies.

Definition:

For graduates from a Minnesota postsecondary institution found in UI data:

Employed Year Round:

Numerator: Number of graduates with employment data employed in 4 consecutive quarters starting at quarter 5 after graduation

Denominator: Number of graduates with employment data

Alternative Measure: Employed Full-Time Year Round:

Numerator: Number of graduates with employment data employed in 4 consecutive quarters starting at quarter 5 after graduation and reported as working an average of 35 or more hours per week

Denominator: Number of graduates with employment data

Context for Metric and Usage:

Employment after graduation provides information about the employability of new graduates and early career wages. Longer-term employment data is required to fully understand the influence education has on lifetime earnings and employment. Employment of recent graduates varies by award type and program of study.

Limitations and Caveats:

UI Wage Detail Records

It cannot be assumed that all graduates not found in the UI data are unemployed. The UI data does not include information on graduates who moved out of state, those employed by federal agencies, individuals in the military, or individuals that are self-employed. Also, due to matching limitations, some graduates may be excluded. Graduates may also have re-enrolled in college to continue their education or made other work/life decisions decreasing the chances of finding the graduate in the UI data, or affecting their ability to work full-time.

Geography

Employment rates only measure whether a graduate is employed within the state of Minnesota. Given that employment information is limited to state borders, employment rates for graduates of institutions near those borders may be artificially low. Graduates of institutions located near Minnesota's borders (e.g. Fargo-Moorhead and Duluth-Superior areas) were less likely to be found working in Minnesota after graduation. This is also a problem for graduates in fields which lead to careers that have a national-based job market, as opposed to one centered around Minnesota.

Occupation

UI data is a census of employment and wages. The UI data does not contain the occupation of employees; only one of the 22 industry sectors of the employer. Therefore, it cannot always be assumed that graduates are employed in their field of study if found in the UI data or when looking at industry of employment. For example, all employees at a hospital (accountants, maintenance, nurses, etc.) regardless of their job duties or occupation are included in the "Health Care and Social Assistance" industry classification.

Some graduates work for employers that have more seasonal or part-time work availability than others. For example, school teachers are not categorized as working full-time, year-round if they work only during the school year. Employees working in the entertainment business such as music or theater are employed as needed and may work in higher percentages part time.

Use of this Metric for Participation in State Financial Aid:

Currently, state financial aid is given to an eligible student based on their income and not allocated based on their major/program of study. Minnesota students are free to declare any major or program of study offered at their institution of attendance if the student meets academic requirements for the major/program and the institution has enrollment capacity in the declared major/program.

Institutions cannot guarantee students they will find a job directly related to their major/program in a geographic location or specific employer the student desires. Even though an increasing number of occupations require training beyond high school, there may be an overabundance of graduates in any given location. This oversupply of graduates results in employers favoring job applicants who have a college degree even though the job does not require one, which leads to underemployment of some graduates.

METRIC 8: Wage Premium

Overview

Overall, graduates working full-time after graduation earn more at each additional level of education compared to those with lower educational attainment (certificate, associate degree, bachelor's degree or graduate degree). The program of study or major, along with the level of award earned, shows the greatest effect on wages earned by graduates. Graduates who majored in engineering and engineering technologies, health science, and in computer sciences earned the most at every level of award. These occupations are known as high-wage, high-demand occupations in Minnesota and in the nation.

What is this metric intended to measure? This is intended to measure the extent to which graduates gain financial stability after college. Comparison of hourly wages earned 12 months, 24 months, and 48 months after graduation provides information about the employment situation of new graduates. A key concern for Minnesota policymakers is the ability of Minnesota workers to earn adequate wages to sustain a family and allow repayment of student loans. Wage rates serve as an indicator of the financial health of Minnesota's graduates. But the wage rate alone fails to indicate the premium earned by individuals completing their postsecondary program.

Do institutions have direct influence over the outcomes of this metric? Somewhat – Academic preparation should be related to employability and the wages earned by a graduate. In addition provision of career services can influence this outcome. However institutions cannot control the larger economy or specific employer pay rates.

Data for metric:

This metric would utilize the same data used by the graduates employed year round metric. Data on college completers from the Office of Higher Education and Unemployment Insurance (UI) wage detail records from the Minnesota Department of Employment and Economic Development (DEED). Individual student level information for each graduate is reported by postsecondary institutions to the Office of Higher Education. Graduate information is matched to unemployment insurance wage detail records provided by DEED. Matching the two data sets requires consistency in reporting personally identifiable information, including name and social security number, by both state agencies.

Definition:

Ideally, the wage premium for an individual is calculated by comparing wages earned by the individual 2 years prior to enrollment or graduation and 2 years after enrollment or graduation. As the Office and DEED continue to develop the creation of wage premium metrics, a substitute measure was developed:

$$\text{State Minimum Wage} * 2080 \text{ hours} - \text{Annual Wages earned @ 2 years after graduation}$$

Context for Metric and Usage:

The wage premium reflects whether college was financially worth it to the student.

Limitations and Caveats:

Geography

Wage rates vary by geography; thus so will the wage premium. Annual median wages were higher for graduates working in the Twin Cities than those working in Greater Minnesota.

Occupation

Unfortunately for graduates, not all jobs requiring postsecondary training pay equally. Some occupations, such as cosmetologist, home health care aide, or childcare provider tend to pay lower wages than other fields that require comparable education or training.

The program of study or major, along with the level of award earned, showed the greatest effect on wages earned by graduates. Graduates who majored in engineering and engineering technologies, health science and computer sciences earned the most at every level of award. These occupations are known as high-wage, high-demand occupations in Minnesota and in the nation.

Of the graduating class of 2012, roughly one of four graduates (24 percent) was employed in health care and social assistance industries, followed by the education industry (13 percent). According to analysis by DEED, these industries continued to grow during the recent recession and provided more entry-level job opportunities than other industry sectors. The health care and social assistance industry is unique as it contains occupations quite polarized in skill and wages. It has many minimum-wage jobs, such as home health aides, but also has some of the highest-skilled and high-wage jobs for nurses and physicians. Whereas higher percentages of college-educated personnel are employed by the technical and professional services industry or the finance and insurance industry. Additionally, some industries pay more than other industry sectors in Minnesota. For example, new engineering graduates employed in manufacturing, or mathematics and statistics graduates employed in the finance and insurance industry have higher starting wages than new graduates employed in other industry sectors.

Degree Level and Major Matters

Wage rates vary by occupation which means that major matters in comparing wage rates and wage premiums. Findings demonstrate that more years of postsecondary education generally lead to higher wages. Median hourly wages ranged from \$15.68 for sub-baccalaureate certificates completers to \$32.87 for graduate school completers. The wage premium for higher education is ultimately driven by the types of firms and, consequently, industries that employed graduates at each education level.

Time

Additionally, this metric tracks the wage rates of graduates one year after graduation. This does not allow policymakers to see longer-term trends in wage premiums by degree level. While wages can be volatile the first year after graduation, the trend gives a better picture of long-term earning potential.

Recessionary impacts

For recent college graduates, the most recent economic recession negatively impacted starting wages. Federal Reserve analysts noted that wages of college graduates grew by only six percent between 2006 and 2014 as compared to full-time workers who saw 14 percent grow over the same time period.³⁰ The stagnation in wages of recent college graduates has lasted longer than prior classes entering the labor market during recessionary periods. The sluggish wage growth for recent college graduates is fully explained by the slowdown in growth across occupations. This wage growth gap points to continued weakness in the labor market and overall economy.

Stagnation in starting wages does not mean that college is a poor investment or that a specific college program is a poor investment. Rather lower wages reflect that it will take a graduate longer to recoup the cost of college. Kahn (2010) finds that those who graduate from college during a recession have lower

³⁰ <http://www.frbsf.org/economic-research/publications/economic-letter/2014/july/wage-growth-gap-recent-college-graduates/>

earnings than other grads, even many years in the future. However, Daly and Bengali (2014) find that a college education is still a worthwhile investment, it may simply have relatively lower returns and take longer to pay off for recent graduates than for those who graduate during economic booms.

Individuals completing college during the 2006 to 2012 time period will likely demonstrate wage premiums that are lower than historical trends or expectations.

Requires continued work with institutions

The data collection and reporting is new. As such the Office will continue to work with institutions to validate the data reported.

Use of this Metric for Participation in State Financial Aid:

It is expected that the wage premium should be positive. Similar to the metric above on graduates employed year round, institutions do not have full control on what jobs their graduates will obtain. State financial aid is given to students based on their family income and not on the student's major/program of study or based on the wages the student may obtain post-graduation.

Also, over the past several decades employers have discontinued many on-the-job training programs. Now, job applicants must obtain needed skills and training on their own time and find other means to finance training. Public and private postsecondary education institutions have expanded their program offerings to fill the void left by employers. An example is the health care industry, especially hospitals. In the past, hospitals offered their own employee training in medical technology, radiologic technology, nursing and other allied health occupations. Now, in Minnesota, there are very few hospital-based training programs offered. Most training in health fields must be obtained at a postsecondary educational institution. There is no guarantee that graduates will find a job or be paid wages to compensate for the costs of their training.

Return on Investment

METRIC 9: Return on Investment

Return on Investment is being utilized as a substitute for Debt-to-Earnings Ratios. Data for calculating Debt-to-Earnings Ratios is not available.

What is this metric intended to measure? This measure attempts to measure return on investment to a program of study by award level at a given institution.

Do institutions have direct influence over the outcomes of this metric? While institutional programs cannot directly control market demand or the compensation levels their graduates may receive, institutions do have a responsibility to ensure that the program curriculum being offered is of value to both the student and the marketplace. Additionally, institutions and their programs have influence over the program costs.

Data for metric: Minnesota’s State Longitudinal Education Data System (SLEDS) contains information regarding wages and graduation and degrees conferred (including award level and program). The data for this metric come from three sources. First, individual level information for each graduate is reported by the institution to the Office. Second, graduate information is matched to unemployment insurance wage detail records provided by DEED. Matching of the two sets of data requires consistency by both state agencies in reporting personally identifiable information, including name and social security number. The third source of data would be IPEDS Net Price information.

Definition:

ROI = Average costs of pursuing a postsecondary education (net price on average + forgone wages [e.g., minimum wage for 9 months]) / Increase in Wages (Graduates’ median annualized salaries – median annualized salaries of non-completers).³¹ In lieu of data on net price by program, we are substituting net prices across all programs by institution.³²

A smaller ratio implies a greater return on investment across all graduates for whom there is available data. Additionally, to provide an accurate representation of students’ ROI, ROI should be tied to individual programs and degree levels at a specific institution. The Office recommends that the ratios for each program and award level within an institution be provided for graduating cohorts 1, 3, 5, 10, and 20 years following their graduation.

Context for Metric and Usage: Increasingly, a postsecondary credential is seen as an avenue for entering or sustaining a middle-class lifestyle. As a result, students and their families are weighing the economic outcomes that are associated with specific institutions and their programs of study. This metric would provide them with the information needed to make a more-informed decision on which institution to attend. Measures of institutional outcomes, however, including the proposed ROI measure, are influenced by institutional inputs (incoming student characteristics) and may not accurately measure the value added by higher education institutions or programs.³³

³¹ Discussions will need to be continued to determine the appropriate proxy for forgone wages. Median annualized salary of non-completers may not be an appropriate point of comparison.

³² Aside from the additional costs associated with debt financing, it should not matter HOW the student paid for the cost of education (borrowing, savings, working while enrolled) when measuring whether college was “worth it.”

³³ Student characteristics likely to impact economic outcomes after graduation include family background, personal skills and experiences, and social networks.

Limitations and Caveats: This metric looks at ROI only at the institutional program level. The metric does not consider the ROI from a state perspective. Caution should be exercised when comparing the ROI for similar programs across institutions. Additionally, as was previously stated, institutional outcomes, including the proposed ROI measure, are largely the result of institutional inputs (incoming student characteristics), they do not solely measure the value added of higher education institutions or programs. Finally, a proportion of graduates may work outside of their programs' fields. Depending on how widely this proportion varies by program, award level, and institution, the ROI measure could be skewed.

There are also numerous data limitations. The proposed measure utilizes Unemployment Insurance Wage Detail records which only capture those workers subject to unemployment insurance coverage requirements. For example, federal government employees, members of the military, and those self-employed are also not included in the wage data as well. Also missing are those employed outside of Minnesota. The average net price by program and degree level may also be a limitation.

Use of this Metric for Participation in State Financial Aid:

No research-based benchmarks have been determined for the ROI metric.