Telling the Minnesota Story

Using Data to Inform Priorities & Decisions of the Minnesota P-20 Education Partnership

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FINAL DRAFT

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Introduction

In 2015, the Minnesota Legislature enacted a state postsecondary educational attainment goal that 70% of Minnesota adults (age 25 to 44) will have attained a postsecondary certificate or degree by 2025 (Minn. Stat. § 135A.012). Educational attainment refers to the highest level of education an individual completes. The state measures educational attainment of a population as a percentage or count of the population that holds a postsecondary credential (certificate, associate degree, diploma, bachelor's degree, master's degree, graduate certificate, and doctoral or professional degree).

Greater educational attainment correlates with increased earnings, lower unemployment, better health, increased civic participation and additional social and economic benefits. The ability of Minnesota workers to live and raise their families in the state relies on their ability to find employment at a family-sustaining wage to cover the costs of housing, food, transportation, and childcare. Analysis of data from the Minnesota Department of Employment and Economic Development (DEED) shows that over 68% of jobs paying family-sustaining wages require postsecondary education beyond high school.[1] Given that employment rates, wages, and wealth of Minnesota's communities of color and indigenous populations lag behind whites, a particular focus on the path to family-sustaining wages for our communities of color and indigenous communities represents an imperative for the state.

The Role of the Minnesota P-20 Education Partnership

The Minnesota P-20 Partnership uniquely provides statewide and cross-organization leadership, and can focus and guide action in closing equity gaps and reaching the state's 70% educational attainment goal. The P-20 Education Partnership—which represents policymakers, stakeholders, and practitioners responsible for ensuring success for students, workers, and citizens—prioritized the educational attainment goal as its 2020 focus area. Over the past year, the Partnership has studied the various components of improving postsecondary success for all Minnesotans, learned from best practices from leading states, and national experts, and created recommendations to guide policy and practice to reach the attainment goal. A critical part of this work was an in-depth review of the research, data, and metrics that are critical to this effort. A Learner Lifespan Workgroup comprised of staff from Partnership member organizations developed this report to center the role of data in informing policy and practice discussions, decisions, actions and results related to the attainment goal.

[1] Office of Higher Education, Jobs and Wages, http://www.ohe.state.mn.us/pdf/workforce_infographic_2019.pdf

The Purpose of this Report

The Lifespan Learner Workgroup was charged with examining the life cycle of an individual to guide the work of the P-20 Education Partnership. Specifically the group was asked to:

1. Map the metrics that contribute to Minnesota's educational attainment across the lifespan,
2. Identify the "pain points" or metrics with a demonstrable negative impact for individuals along the learner lifespan journey that demand action, and
3. Identify a starting list of relevant evidence-based strategies for addressing those areas.

This report captures the workgroup's findings. The rich discussions throughout the explorations highlighted insights around the vital importance of data in discussions and decision making regarding policies, programs, and investments made throughout the state, including by P-20 Education Partnership member organizations. Given the events of 2020 in our state and our neighborhoods, the focus on racial equity and the need to broaden our discussions around how data is collected, used, and protected to better represent all in of our community was a thread that ran through all conversations and is evident in the strategies and recommendations presented here.

The Attainment Goal: Where We Stand Today

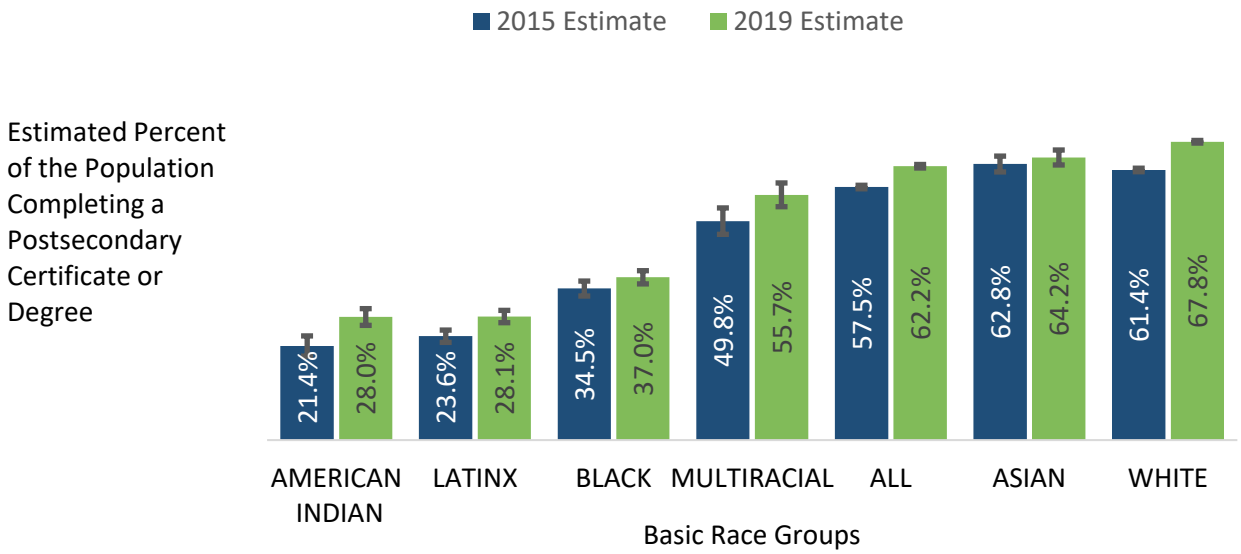
Current estimates for 2019 by the Minnesota Office of Higher Education, in partnership with the Minnesota Demographic Center, show that 62.2% of Minnesotans aged 25-44 years have completed a postsecondary credential (Figure 1). This percentage is an increase over the 2015 estimate of 57.5%.

- White Minnesotans still have the highest attainment rate of 67.8%, closely followed by Asian Minnesotans (64.2%).
- American Indian and Hispanic/Latino Minnesotans share the lowest attainment percentage at 28.0% and 28.1%, respectively.
- Black Minnesotans have an attainment rate of 37.0%.

Current estimates show clearly the disparities that exist within Minnesota. It should be noted that these broad categories of race and ethnicity mask gaps in attainment within each community.

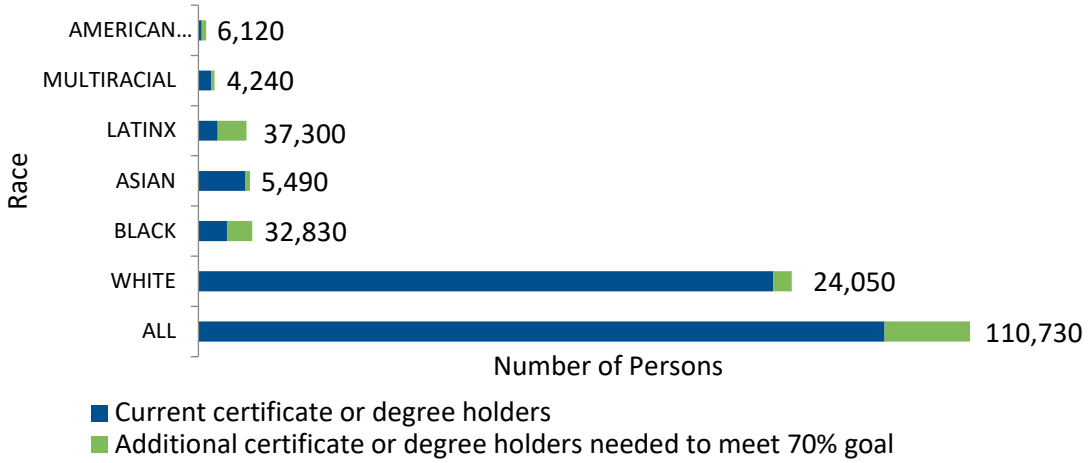
In order to reach the 70% educational attainment goal set by the Legislature, Minnesota will need an additional 110,730 persons age 25-44 to complete a postsecondary credential by 2025, as shown in Figure 2. This will require both more young people graduating from high school and advancing to earn a certificate or degree, and more adults returning for education and training. In order to meet the racial/ethnic benchmarks, 6,120 credentials must be earned by American Indians, 5,490 by Asians, 32,830 by Blacks, 4,240 by multiracial individuals, 37,300 by Latino, and 24,050 by whites. In total, persons of color or indigenous persons must earn 78% of the 110,730 additional postsecondary credentials needed. Unless the state increases access to and completion of postsecondary education and training for persons of color and indigenous persons, it is not likely that the state will meet the 70% attainment goal.

Figure 1: Percentage of the Population Age 25-44 with a Certificate or Higher Credential, Minnesota, 2015 and 2019 Estimates by Basic Race Groups



Source: IPUMS Microdata version of U.S. Census Bureau American Community Survey (2008-2012, 2013-2017), with certificate data provided by the Office of Higher Education and Minnesota State Colleges and Universities, and with tabulations and analysis completed by the Minnesota Demographic Center

Figure 2: Persons with a Certificate or Higher Credential, Age 25-44, and Number Yet Needed to Reach 70% Goal by Basic Race Groups, 2019 Estimates



Source: IPUMS Microdata version of U.S. Census Bureau 2013-2017 American Community Survey, with certificate data provided by the Office of Higher Education and Minnesota State Colleges and Universities, and with tabulations and analysis completed by the Minnesota Demographic Center

Mapping the Metrics

The starting point for identifying data and metrics was to convene a workgroup of representatives from P-20 Education Partnership member organizations. Collectively, the workgroup members had expertise across areas of early childhood care and education, K-12 education, and postsecondary education. Using the attainment goal to ground its focus, the group developed a comprehensive list of known metrics.

Metrics Mapping

The workgroup's list of identified metrics was a compilation of outcome measures and predictors for lifespan learning. All measures identified were coded based on availability, reliability, and use of data for local and state purposes.

As a second task, the workgroup mapped all the metrics to a visual diagram composed of layers that represent the multitude of ways that the system interacts with individuals across the learner lifespan. The list of measures within each layer described below can be found in Appendix A.

- Using educational attainment as a starting point, the mapping includes 96 **individual measures across early care and education, K-12 education, postsecondary education, workforce training, and employment**. The individual learner measures were grouped by their relationship to high school completion, college enrollment and persistence, and workforce training. Also included are post-attainment measures of employment and wages.
- The second layer of the mapping includes 13 measures related to the **social and economic context** within which the individual was learning. The measures focus on aspects that are largely outside of school, district, or college control but have a demonstrated impact on learner outcomes.
- The third layer of the mapping includes 10 measures related to **organizations and systems**. The measures focus on characteristics, structures, or practices of organizations or groups of organizations that impact outcomes across learners.
- The final layer of the mapping includes 3 measures related to **equity**. The measures focus on aspects detailing disparities and inequities within the practices, investments, and policies of Minnesota's education and workforce systems. This layer is all-encompassing and has impacts on each of the nested layers.

In total, workgroup members identified and assessed a total of 122 metrics – too many for the P-20 Education Partnership to use in reporting and setting a strategic agenda. The workgroup next prioritized the metrics by identifying where we continue to underserve or fail Minnesota learners across the learner lifespan.

Identify “Pain Points” in the Learner Lifespan

It’s challenging to sort through 122 metrics when developing a strategic agenda informed by data. While data can drive conversations, prioritizing the pain points for Minnesota was critical. The prioritization process pushed members to leverage their knowledge, values, and contextual understanding to identify which areas are highest priority. The workgroup used two prioritization strategies.

1. **Values-based priority setting** to ensure that the recommended metrics reflected the priorities of stakeholders of the P20 system and were critical to informing the strategies to reach the postsecondary attainment goal.
2. **Best practice principles priority setting** to ensure that quality and actionable information is the product of this data-collection and presentation process. Guiding principles include, but are not limited to, actionable (usable at both the local and state level), equitable (can be disaggregated by student demographics), and research-driven. Education Strategy Group developed the guiding principles based on prior work done by other states.

In essence, both priority-setting strategies are central to making final recommendations about which metrics members prioritize in the reporting and their subsequent use in discussions and decisions. An agenda based on values alone may omit metrics related to key actionable areas not previously addressed. An agenda based on best practices alone may omit metrics related to key actionable areas central to member organization missions and work.

Values-based priority setting

Value-based priority setting asks workgroup members to identify measures representing focus areas for their organizations. Members are not asked if the measures chosen are feasible or available but rather focus on the most meaningful measures of progress and success toward the state educational attainment goal. Measures selected by the workgroup chosen indicate that the member organizations see the need to improve outcomes in the area chosen and that the area aligns to the desired outcome for the state’s education attainment goal as directed by the P-20 Education Partnership.

Each workgroup member was asked to identify one measure for each of the following:

- If we don’t fix this, we won’t succeed.
- This shows our system is not working for communities of color.
- This is so basic, why haven’t we addressed this?

Values-based priority setting by workgroup members identified 24 measures representing focus areas from the perspective of their organizations or professional expertise (see Table 1 and discussed in Appendix C). While the discussion results are informative, workgroup members feel the results may be incomplete for two reasons. First, P-20 Education Partnership member organizations’ leaders may place different value on the measures identified by staff. Secondly, the values-based priority-setting

activity should engage with individuals and leaders from communities of color and indigenous communities. Our values, be they personal, professional, or organizational, reflect personal context and experiences. As such, the metrics identified here are likely not representative of the values of the communities and individuals of focus for the state's attainment goal. True equity cannot be achieved without direct involvement with and by individuals and communities involved in our educational system.

Best Practice Principles for Prioritizing Metrics

Upon completion of the values-based priority setting, members began assessing the metrics for their ability to contribute to informing the P-20 Education Partnership's priorities and decisions. Education Strategy Group highlighted the metrics and dashboards of states such as North Carolina, Texas, Kentucky, and Georgia. The ESG guiding principles listed below were developed the best practices of those states. These principles can be viewed as a starting point to the conversation in prioritizing metrics and should be tailored to Minnesota's unique context.

Metrics to measure outcomes across the learner lifespan should be:

- **Cross-Sector:** The prioritized metrics capture data from across the learner lifespan, from early childhood through the workforce, to create stronger alignment between sectors and to better understand when and how students are getting lost in the transition.
- **Equitable:** The metrics can be disaggregated by student characteristics, including income status and race/ethnicity, to analyze equity gaps.
- **Actionable:** The information should be presented in a timely and user-friendly manner that is geared to inform decision making and actions.
- **Localized:** The availability of the prioritized metrics make it possible to view data and make meaningful comparisons at the local level.
- **Digestible:** The number of included metrics are manageable for both state and local stakeholders to regularly review, analyze, and take action.
- **Strategic:** The prioritized metrics are explicitly tied to specific strategies and policies, either at the state or local level, to drive improvement
- **Predictive:** The included metrics represent either key benchmarks across the learner lifespan or are leading indicators of key educational outcomes.
- **Research-Driven:** The prioritized metrics are backed either by statistical research or through evidence of practice by other states, districts, or institutions.

The best practices identified by Education Strategy Group informed the workgroup's development of the recommended metrics shown in Table 1 and Figure 3.

Using Data to Set the Agenda: A word of caution

A common misstep in using data to drive an agenda involves using data to identify problems without digging deeper into why the problem is occurring. Data alone cannot provide answers; it is important to consider carefully and collaboratively the causal factors and root causes for observed outcomes to ensure the reliability and validity of the data analyzed.

- Causal factors: conditions that contribute to an outcome. If causal factors are not present, the outcome would be different.
- Root cause: primary factor that produces an outcome. If the root cause was not present, the outcome would not occur.

When a problem is observed, stakeholders may want to move quickly to develop solutions without taking the steps to ensure the validity of research or analysis. Chosen solutions could be addressing a misunderstood problem and therefore be ineffective. Stakeholders should reflect on why they might be observing the outcomes they do, or in other words: what is the story behind the data; what are the factors leading to what we see? The Actionable Intelligence for Social Policy (AISP) initiative at the University of Pennsylvania[2] provides a guide to factor analysis;

1. Define the current outcomes for a population and relevant subgroups of a population (e.g., race, ethnicity, gender, race and gender);
2. Identify causal factors. Collaboratively identify what is contributing to the outcomes. Gains being made: What is contributing to the bright spot? No gains: What is happening? Where is the population/subgroup losing ground?; and
3. Get to the underlying root causes. Ask "Why?" five times to understand the causal factors and the problem and solutions for the whole population or subgroup(s). What is the underlying reason the problem or solution is occurring? What is helping to shape the underlying reason?

While reflecting on the recommended 24 metrics we offer in this report, we encourage you to ask Why? Why? Why? Why? Why?

[2] Toolkit for Centering Equity https://www.aisp.upenn.edu/wp-content/uploads/2020/08/AISP-Toolkit_5.27.20.pdf

Figure 3. Learner Lifespan Metrics in support of Minnesota's Educational Attainment Goal

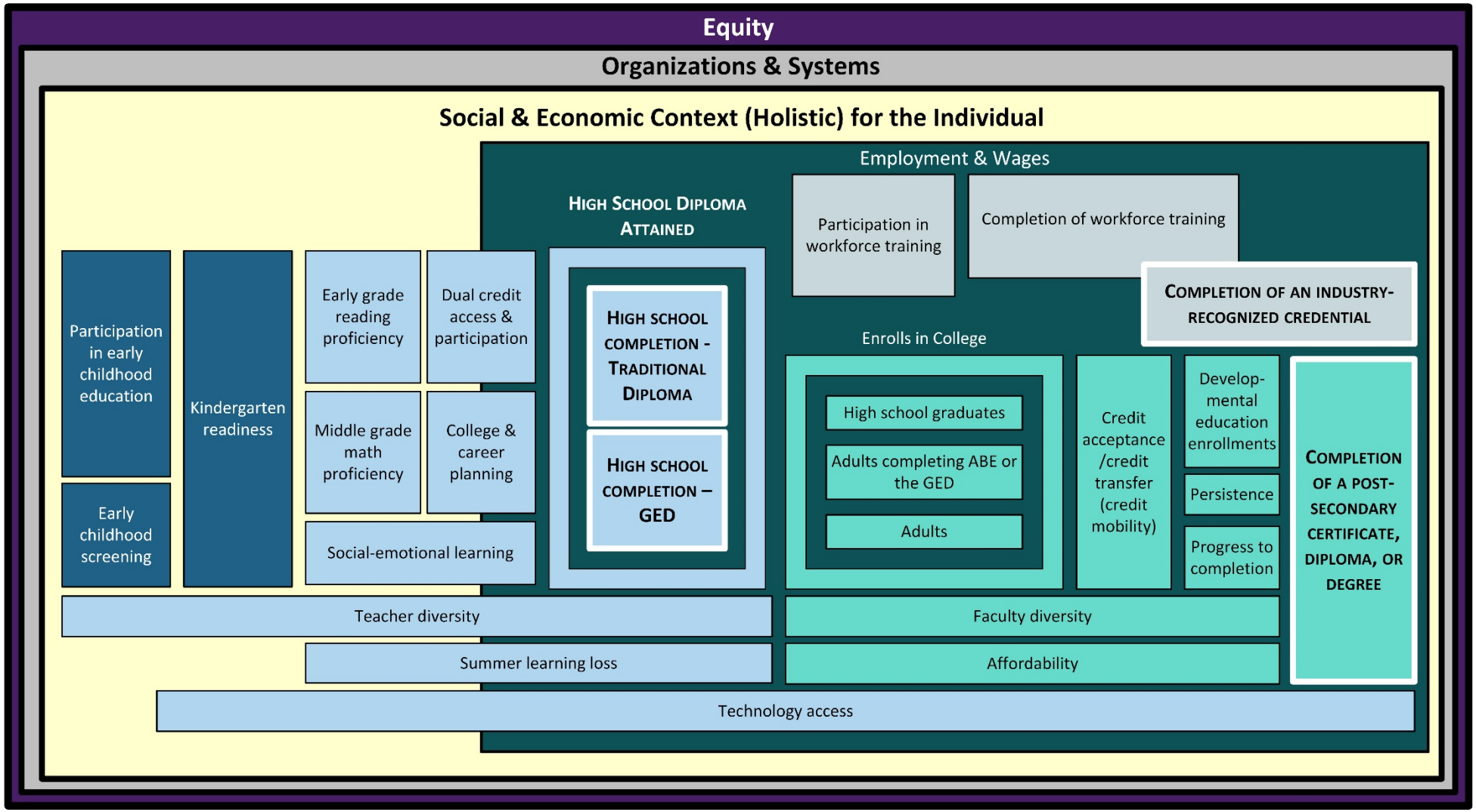


Table 1. Recommended Metrics

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
Early Childhood	Participation in early childhood education	Access to a system of high-quality early care and education programs positively impacts educational outcomes in life.	The number of kindergartners for whom participation in public early care and education.	This metric is limited to the data that is available—children and families taking part in public programs and services.	 YES
Early Childhood	Early childhood screening	A simple process measuring a child's developmental status to identify possible interventions that might positively impact their kindergarten readiness.	The numbers of kindergartners who have and have not been screened, and the age at which they were screened.	Currently collected data reflects children enrolled in public schools only.	 YES
Early Childhood	Kindergarten readiness	The physical, emotional and cognitive readiness of children (among other characteristics) at the point of kindergarten entry that can assist teachers with identifying the strengths and needs of each child.	The number of kindergartners meeting developmental standards as measured by MDE-approved comprehensive, developmentally appropriate assessments.	This data is not consistently collected at a state level.	 LIMITED DATA
K-12	Early grade reading proficiency	Early reading proficiency is an important milestone in a child's education experience.	The number or percent of students identified as proficient on the Grade 3 Reading Minnesota Comprehensive Assessment.	Standardized assessments measure the degree to which courses are aligned to standards.	 YES

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
K-12	Middle grade math proficiency	Minnesota K-12 Academic Standards in Mathematics are grounded in the belief that all students can and should be mathematically proficient.	The number or percent of students categorized as proficient on the MCA Math test for grades 6, 7, and 8.	Standardized assessments measure the degree to which courses are aligned to standards.	✓ YES
K-12	Social-emotional learning	Individual student emotional and developmental skills impact academic success.	This metric measures the percent of students answering positively in 4 areas: Developmental Skills, Commitment to Learning, Positive Identity, Social Competence.	Not all students complete the Minnesota Student Survey (2019 66% of fifth grade students, 68% of eighth grade students and 54% of 11th grade students).	✓ YES
K-12	High school completion - Traditional Diploma	High school graduation is essential for a variety of long-term adult outcomes including entering the workforce as well as the ability to enter post-secondary education.	The four-year (five-year, six-year, seven-year) graduation rate shows the number of students graduating from high school within four (five, six, seven) years after entering grade nine. Alternatively, the cumulative percent of ninth graders who complete high school, regardless of time frame, could be measured.	Focus on shorter time frames (e.g. four-year rates) may not be inclusive for students with complex needs.	✓ YES

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
K-12	High school completion – GED	High school graduation is essential for a variety of long-term adult outcomes including entering the workforce as well as the ability to enter post-secondary education.	This metric measures the count of new GED recipients in Minnesota in a given year.	The total of students who passed the GED provides limited information. Instead, the number must be placed within the context of the student's educational history.	✓ YES
K-12	Teacher diversity	Children of all races and ethnicities and backgrounds perform better when they are exposed to teachers of different backgrounds.	This metric compares the proportion of teachers with the proportion of students by demographics. Alternative measures: 1. Comparing teacher diversity to adult population diversity, or 2. Create a student-teacher parity index	Statewide numbers do not reflect distribution in schools across the state.	✓ YES
K-12	Dual credit access & participation	Participating in dual credit courses increases the likelihood of college enrollment and completion and provides high school students with engaging academic experiences.	This metric is defined as the percent of high school graduates (or enrolled students) participating in one or more dual credit programs. Alternative measures would include both data on rigorous course-taking and data on career and technical education as both areas prepare students for college or career.	This metric does not measure the extent to which students participating in dual credit courses eventually receive college credit for participation.	✓ YES

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
K-12	College & career planning	The Personal Learning Plan is intended to encourage students to think more intentionally about their future coursework, career aspirations, and preparation for postsecondary education or training.	This metric is defined as participation in activities to prepare for college and career, including exploration of career interests, work-based learning, exploration of college options, how to apply to college, and how college is different from high school.	We lack data indicating the activities in which students engaged, how these practices are implemented in schools, and how participating in specific activities relate to students' completion of key milestones on the road to college and career.	Ø NO DATA
K-12	Summer learning loss	As students return to school, many will start the academic year with achievement levels lower than where they were at the beginning of summer. Mitigating summer learning loss can improve the likelihood that students achieve reading and math proficiency.	Using standardized tests, the measurement is based on comparisons of spring achievement levels and fall achievement levels for students in grades K-9 while tracking participation in summer learning programs or other academic support interventions provided.	This metric does not currently exist at a state level.	Ø NO DATA
K-12	Technology access	COVID-19 renewed urgency for closing the digital divide. Without access to an Internet connection and/or dedicated learning device at home, students are at risk of falling significantly behind in or not completing their education.	This metric measures the percent of students who (1) have access to Internet connectivity and/or a dedicated device at home and (2) whether that access is sufficient for high-quality online learning.	This data is not currently collected.	Ø NO DATA

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
College	College enrollment of high school graduates	The share of high school graduates enrolling in postsecondary is the standard measure for college enrollment. College enrollment also can be a measure of access and is the first step to attaining a postsecondary certificate or degree.	This metric is defined as the share of high school graduates enrolling in college within a given time frame (immediate fall enrollment, enrollment within 16 months of high school graduation, enrollment within 2 years of high school graduation, enrollment by age 25 or 8 years after high school graduation).	This metric does not measure college enrollment of non-traditional populations (HS dropouts, adults age 25+).	✓ YES
College	College enrollment of adults completing Adult Basic Education (ABE) or the GED	Enrollment in higher education is a critical transition in our education system. College enrollment also can be a measure of access and is the first step to attaining a postsecondary certificate or degree.	This metric can be defined as the percentage of persons previously enrolled in ABE who enroll in college in a later time period, and the percentage of persons not previously enrolled in ABE but passing the GED in Minnesota who enroll in college in a later time period.	While measuring the enrollment activity of adults in nontraditional pathways, it does not measure the effectiveness of transitions of ABE participants or GED completers to college.	✓ YES

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
College	College enrollment of adults	To advance the state's educational attainment rate, increasing college completion rates of adults age 25-44 who have never enrolled in college is important.	This metric can be defined as the percentage of persons aged 25-44 without an associate degree or higher who are currently enrolled in postsecondary education.	While measuring the enrollment activity of adults age 25-44 as a percent of the population will describe participation, it does not measure the effectiveness of transitions to college.	 YES
College	Persistence	The transition between year one and year two in college are a common time for students to stop out from higher education and is crucial for college completion.	The percent of new entering first-time students or new entering transfer students still enrolled or having completed an award at any college at 12 month intervals (12 months, 24 months, 36 months, etc.).	Persistence rates vary significantly based on the type of institution the student attends (public four-year, public two-year, private not-for-profit four-year, etc.).	 YES
College	Progress to completion	College completion can be broken down into progressive steps indicating within annual timeframes "how much" of the certificate or degree the student has completed as means of assessing the state's ability to move students through the higher education system efficiently.	There are two potential metrics: 1. A Credit Completion Ratio or the total number of credits earned in the first year divided by the total number of credits attempted. 2. Progress to Completion Ratio - the percent of new entering students meeting a defined credit threshold for the time period chosen.	Data available to track progress to degree is limited at the state level. We can track credits accumulated by students over time since entry into college. We cannot track the number of credits required to complete a specific program.	 YES

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
College	Affordability	College affordability impacts both college access and completion. Currently no agreed upon definition of "affordable" higher education exists. Affordability can be defined as the ability of an individual (or family) to purchase needed or appropriate education and still have sufficient income to purchase other essential goods and services.	Affordability measures the share of individuals who have adequate resources to enroll in college and can be measured in 3 ways: 1. Affordability at Entry: Does the individual or family have adequate resources to enter into higher education? 2. Affordability of Repayment: Does the individual or family have adequate resources post-college to repay any loans? 3. Affordability over a Lifetime: Will the value of education received exceed the net cost paid by the individual?	Data for this metric is currently being developed by OHE. Enrolling in college does not equate to completing college, so stakeholders may want to weigh affordability measures by the percent of students who complete their program in order to obtain a truer picture of effective affordability policies.	! IN PROGRESS
College	Faculty diversity	Having a diverse faculty increases the likelihood of students engaging with their institution, the opportunities for all students to question their perceptions and preconceived notions, and the preparation of all students for the workplace.	The metric is defined as the percentage of faculty who are individuals from diverse backgrounds.	Current data is limited to race/ethnicity and gender as reported to the U.S. Department of Education, IPEDS survey.	! LIMITED DATA

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
College	Credit acceptance/credit transfer (credit mobility)	Credit transfer and acceptance is a process that is confusing, complex to navigate, and likely negatively impacts students without college knowledge disproportionately. At the same time, successful transfer of credits can speed up a student's progress in college and increase the likelihood of completion.	This metric is defined as the share of credits accumulated by a student being accepted for transfer by an institution.	Data for this metric is not currently available. Most institutions do not record credits assessed for transfer but not accepted. Note: This metric is not meant to be a recommendation that all credits should transfer or be accepted by a college.	Ø NO DATA
College	Developmental education enrollments	Enrollment in developmental education is a measure of college readiness, and may be an academic barrier for students. Developmental education is a term used to refer to courses offered by postsecondary institutions to prepare students for success in college-level work.	This metric is defined as the percent Minnesota public high school graduates who enrolled in developmental education courses at a Minnesota postsecondary institution, within two years of their high school graduation.	This metric does not measure college readiness of all students (e.g. adult learners, students delaying enrollment). As curricular reforms occur, this measure will become obsolete as developmental education courses will be replaced by supplemental instruction or other academic interventions.	! CHANGING DATA
College	College completion	College completion is the central measure of educational attainment for an individual.	The number of new entering students completing a credential at a chosen point in time (2 years, 3 years, 4 years, 6 years) out of the number of students that started college.	Completion is influenced by a student's ability to navigate college systems, the culture and student support services of a particular institution, and student characteristics.	√ YES

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
Workforce Training	Participation in workforce training	The larger vision for attainment include measuring attainment of industry-recognized credentials which can be obtained through a variety of workforce training programs.	This metric is defined as participation in a workforce training program.	Data may be limited to workforce training program funded through state investments or federal WIOA funding.	√ YES
Workforce Training	Completion of workforce training	Completing workforce training can translate into receiving a postsecondary credential or industry-recognized credential.	This metric is defined as the number of individuals completing workforce training by credential received.	This metric relies on an understanding that changing economic conditions and populations impact program participation and outcomes.	√ YES
Workforce Training	Completion of an industry-recognized credential	Minnesotans leverage alternative postsecondary education and training pathways to improve employability and overall outcomes. These programs, especially those leading to an industry-recognized credential represent a critical outcome for state workforce development.	This metric is defined as the number of and rate at which Minnesotans earn industry-recognized credentials.	No data currently exists for this metric which would Minnesota identify existing programs leading to an industry–recognized credential and negotiating with organizations certifying the credential to gather needed data.	Ø NO DATA

Area	Key Performance Indicator	Description	Measurements Available	Limitations	Data Status
Employment	Employment Rate	Employment rates are critical to understanding which individuals are more likely to be employed. While we confront bias in our education systems, similar bias exists within employment. Minnesotans from communities of color and indigenous communities are employed at rates lower than their peers. Ferreting out bias in employment after individuals leave education and training is needed to achieve true equity.	The percent of graduates found working in Minnesota at a given point in time post-completion as share of total graduates. An alternative measure would be the percent of graduates found working full-time as a share of graduates found working in Minnesota.	This data is not a measure of employment in an occupation related to the student's field of study. The 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.	✓ YES
Employment	Wages	The state's attainment goal assumes positive employment and wage outcomes for individuals exiting education and training programs. To ensure an effective system, we should identify areas where positive outcomes are not achieved. Wage rates can be used as a proxy for financial stability, or positive return on investment from investments in education.	This metric is defined the percent of graduates earning annual wages at or above the cost of living based on income needed to sustain a family in Minnesota by county or region.	Wage rates reflect economic conditions and may be subject to interpretation. Wages received varies significantly with the individual's prior career experience and characteristics, geography, industry, and occupation. This metric isn't intended to measure whether college was financially worth it to an individual student or the state.	✓ YES

System Considerations

During the process of identifying the 24 metrics shown in Table 1, the workgroup identified multiple issues identified multiple system level issues that should be addressed as part of the broader P-20 Education Partnership discussions about the educational attainment goal. These system considerations have a substantial impact on a learner's educational attainment and represent things we wish were known or know we need to explore.

Consideration 1: Prioritize American Indian Minnesotans

Minnesota's education system must address its own failures that push out (or fail to pull in) learners who exit (drop out) in K-8, high school, college, and work, specifically for American Indian Minnesotans. Using existing metrics, we know the Minnesota K-12 and higher education systems have been least successful serving American Indian students. Educational attainment is the final measure in a series of system failures that impact measures of success for students including kindergarten readiness, academic proficiency, high school graduation, college participation and college completion that are heavily influenced by the historical trauma caused by our educational and social systems. Focusing on remediating system failures for American Indian Minnesotans acknowledges that this is the area where the state needs to do the most work, should concentrate resources, and will serve to improve outcomes for all persons of color and indigenous persons.

Consideration 2: Define Readiness

Minnesota's education and workforce systems lack shared cross-system definitions of kindergarten readiness, college readiness, and career readiness which have been developed, agreed to, and acted on followed by action by all stakeholders. Our individual systems can operate without shared definitions but students transitioning between systems may be negatively impacted by mixed messaging or misaligned policies. Without shared definitions, true collaboration across systems may be slow, be impeded, or reinforce the disconnected nature of our education and workforce training systems.

Consideration 3: Ensure Transitions by Design thru Cross-Agency Coordination

Critical points in the learner lifespan occur around transitions between programs and systems. Our siloed systems means no one is accountable for these transition points. The workgroup believes that the P-20 Education Partnership can provide the forum for those discussions and take shared accountability for addressing transitions. In particular, we need a better understanding of the qualitative and contextual factors surrounding key transitions to generate actionable data and increased focus around guidance and navigation within and between systems.

Specific transitions include:

College and Career Planning

The qualitative aspects of transition from student to worker, whether directly from high school or after postsecondary, are not measured. Did the student benefit from a career/jobs advisor? Did the student use career-exploration services and/or follow the advice of career/workforce center staff? What is considered a successful personal learning plan for high school students? How do we expand access for students starting in middle schools to data, navigation and guidance around available pathways and careers? What level of engagement or activities in college and career exploration lead to successful transitions? There is research on factors that work, but we don't know what our students experience. If we want to improve the number of students transitioning to college or career post-high school, we must invest in analyzing their experiences.

Transitions within Higher Education

We know that students transfer among colleges, between two-year colleges and four-year colleges, public colleges and private colleges. Some of that movement is captured in data. The existing data reflects access (e.g. do they enroll? and if they leave, do they enroll somewhere else?) but does not always reflect success (e.g. do they complete?), nor what was done to help that student make the initial decision and smooth the transition into the new institution (e.g. was transfer part of the student's academic plan? Was the transfer unplanned?). A transfer between colleges tends to reflect negatively on the initial college, yet it may be wise advising may have helped to redirect the student. A college transfer may also may reflect a student's lack of adequate exploration and preparation prior to college, leading the student to an institution that proves to be a wrong fit. It may also simply be that the student discovered a new field of interest better pursued at another institution, or life/financial situation requiring a change. Without contextual information, we do not know what the transition means, nor can we improve the likelihood of any student's success.

Consideration 4: Engage Communities

Equity cannot be achieved without direct involvement with and by individuals and all communities involved in our educational system.

> *"Meaningful engagement occurs when stakeholders are able to have true influence over the design and direction of a data effort and its use cases. Tokenism and performative inclusion will undercut trust and relationships, particularly among groups historically underrepresented among and marginalized by dominant decision-making processes. Members of the local community and those most represented in the data must always have seats at the decision-making table. Diverse stakeholder engagement is essential to informed, ethical planning and a key component to establishing trust and strong relationships throughout the data life cycle" (AISP, 2019).*

Determining what should be measured, which metrics are valuable and for what purpose, how to gather and retain data, and how to assess it, require participation. How do we ensure that targeted

communities are able to tell their own education story? Who defines the problem? Who decides the solution? Furthermore, for engagement to be authentic, those individuals and communities must be given the authority or power to determine the final priorities, and past harms must be acknowledged.

The focus on closing equity gaps in educational outcomes necessitates that the P-20 Education Partnership members engage with citizens and organizations outside of regular meeting attendees to garner feedback on the metrics chosen and their use. Members of the workgroup also expressed concerns that the P-20 Education Partnership is not ready to conduct a full engagement process which—in order to be done properly—requires an investment of time and resources.

Consideration 5: Disaggregate Data at Every level

Data should always be disaggregated data at a classroom or course level to ensure the most accurate picture of performance by specific groups. Improving educational attainment rates for persons of color and indigenous persons requires metrics that don't mask disparities due to aggregation of all student information. Agencies, organizations, schools, and colleges should disaggregate the data for each class and assess who is succeeding and progressing, and who is not. As this report notes, not all metrics can be disaggregated, and even when disaggregated data is available it is not always studied. Equity will requires consistent, intentional use and development of relevant disaggregated data in order to affect change.

Organizations participating in systemic review of disaggregated data at a classroom or course level often ask each staff member to participate in an on-going assessment of the unconscious or conscious biases and assumptions that lead to often unconscious, but nonetheless detrimental racism. We all bring with us years of experiences, stereotypes, and bias regarding student success, motivation, and family involvement. Schools and colleges need to provide space for staff to access data, engage in dialogue, be uncomfortable, and find mentors or supports to assist them with their personal development and growth.

Consideration 6: Address the Student's Holistic Needs

Too often academic achievements are isolated from the context in which they occur. Ensuring students and their families have access to basic needs such as food, clothing, housing, and medical care is critical. Additionally, ensuring that students also have access to resources that reinforce academic success (e.g. technology, caring adults) is also critical. In early care and education, ensuring families have such access is a fundamental goal of many programs and services. For schools and districts, students' basic needs and reinforcing needs can overwhelm the system. Finally in higher education, the perspective that colleges should address needs outside the classroom or needs that are not academic in nature is relatively new, may not be a welcome concept for some faculty and administrators, and requires a shift in thinking. This is an area where alignment and collaboration across systems is critically important.

Implementation and Sustainability

The original charge of the Learner Lifespan Work Group was to identify the metrics necessary to inform policy and programmatic decisions and actions to positively impact the attainment goal. The metrics presented in Table 1 provide a data foundation for agenda setting and a starting point for building consensus on the strategies needed to improve outcomes to close equity gaps in educational attainment and increase levels of attainment for the state.

Before proceeding with implementation, the P-20 Education Partnership does need to determine how a dashboard would be used as part of an overall strategy to support improved outcomes.

1. What's the purpose of the dashboard?

   Data cannot be the end goal; the metrics should be a tool to inform conversations, decisions, and actions. Members need to decide the purpose of the dashboard and how this dashboard will be used. The final metrics you select may vary based on the purpose. Example of dashboard purposes may include:

   - Displaying current performance related to key performance metrics within a shorter time frame to understand if performance is on target,
   - Establishing targets based on insights into historical data which identify areas of priority to focus work,
   - Monitoring and guiding long-term strategy with the help of key performance metrics and provide a state-wide overview, or
   - Helping guide users through the decision process by providing the ability to explore the data.

2. Who is the audience?

   P-20 Education Partnership leadership stated that the audience will be the members of the Partnership. Are the members prepared to use this dashboard as a tool to inform their decisions both within the Partnership and in their own organizations?

3. Is the Partnership ready to use the data to inform strategies for improving outcomes leading to increased attainment?

   Are members ready to take the time and effort to review key data at every meeting and discuss the implications of the analysis on our decisions? Are the members willing to invest the time to address the issues that are made apparent by a dashboard? How?

4. How will this work happen and be sustained?

   - Who will own/host this dashboard? Will this be publicly accessible?
   - Who will build the dashboard? Which staff?

- How will the information provided be disseminated to members?
- What roles and/or processes are needed for:
    - Oversight – ensuring the data product or dashboard meet member needs
    - Quality – ensuring data is timely, accurate, and interpreted appropriately
    - Action – ensuring the information provided leads to the right solutions
- How does this align/overlap with existing data initiatives (e.g. SLEDS, ECLDS)? How does this align with existing groups (e.g. OHE's Educational Attainment Stakeholders group)?
- How do we ensure there isn't confusion between existing dashboards (see appendix D)?

A Call to Action

Workgroup members focused on laying the foundation of data to inform discussion and collaborative action of the P-20 Education Partnership. The metrics recommended are meant to highlight the areas where member organizations can have the largest impact on equity of outcomes in meeting the state's attainment goal. The workgroup concludes this report with two recommendations for the P-20 Education Partnership to consider as they work to improve outcomes to close equity gaps in educational attainment and increase levels of attainment for the state.

Recommendation 1: Engage Community Voice in the P-20 Partnership Work—especially around data

This report does not reflect the larger perspective of Minnesota's communities of color nor indigenous communities. As such, we acknowledge that the story of equity we are telling may be incomplete, may reflect the unconscious bias we hold, and may be influenced by the privilege we have experienced within the educational system we experienced.

- How do we ensure that targeted communities are able to tell their own education stories?
- Who defines the problem? Who decides the solution?

True equity cannot be achieved without direct involvement with and by individuals and communities involved in our educational system. Without the perspective of all of Minnesota's communities, students, and families, we may be defining the wrong problems and investing in the wrong solutions to reduce Minnesota's education equity gaps. For engagement to be authentic and trusted, the partnership must endow organizations representing communities of color with the power of inclusion in discussions and decision-making around over the final actions taken.

Engagement of communities can be done in several ways. First, invite organizations representing communities of color and indigenous communities to serve as members of the P-20 Education Partnership with full voting rights as allowed under its bylaws. Secondly, consider investing resources and time in a full community engagement process that openly acknowledges past harms caused by our education systems, fully empowers individuals to tell their education story on a level playing field, identifies the problems or barriers to success as seen thru the student and family lens, establishes a common contextual understanding, and develops consensus on solutions to identified barriers.

Recommendation 2: Commit to Acting on the Data

The P-20 Education Partnership should:

- Create the dashboard - Data for the metrics should be regularly collected and reported on in a format appropriate to its purpose and use,
- Understand the Data - Commit to reviewing the dashboard and other analyses at every meeting and use the data to inform discussion and priorities, and
- Use the Data - Adopt strategies that are proven by research, leverage the resources and relationships members bring, and fill gaps in work being done. Generation Next uses a

collective impact framework that engages stakeholders and community members to inform practice, policy, and funding decisions.

In Conclusion

The Minnesota P-20 Education Partnership uniquely provides statewide and cross-organization leadership, and can focus and guide action in closing equity gaps and reaching the state's 70% educational attainment goal. The P-20 Education Partnership prioritized the educational attainment goal as its 2020 focus area. Over the past year, the Partnership has studied the various components of improving postsecondary success for all Minnesotans, learned from best practices from leading states and national experts, and created recommendations to guide policy and practice to reach the attainment goal. This report frames the data available to members that can inform future discussions, build common understanding, and to offer recommendations to members in using data to set a strategic agenda. Eliminating Minnesota's disparities in education and workforce will require a sustained commitment by Partnership members and the state as a whole. We believe the information provided by this report can assist in the process of reaching the state's education attainment goal.

Appendix A. Mapping the Metrics

The starting point for identifying data and metrics was to convene a workgroup of representatives from P-20 member organizations. Collectively, the workgroup members had expertise across areas of early childhood care and education, K-12 education, and postsecondary education. Using the attainment goal to ground its focus, the group developed a comprehensive list of known metrics.

Metrics Mapping

The workgroup's list of identified metrics was a compilation of outcome measures and predictors for lifespan learning. All measures identified were coded based on availability, reliability, and use of data for local and state purposes.

As a second task, the workgroup mapped all the metrics to a visual diagram composed of layers that represent the multitude of ways that the system interacts with individuals across the learner lifespan. The list of measures within each layer described below can be found in Appendix A.

- Using educational attainment as a starting point, the mapping includes 96 **individual measures** across early care and education, K-12 education, postsecondary education, workforce training, and employment. The individual learner measures were grouped by their relationship to high school completion, college enrollment and persistence, and workforce training. Also included are post-attainment measures of employment and wages.
- The second layer of the mapping includes 13 measures related to the **social and economic context** within which the individual was learning. The measures focus on aspects that are largely outside of school, district, or college control but have a demonstrated impact on learner outcomes.
- The third layer of the mapping includes 10 measures related to **organizations and systems**. The measures focus on characteristics, structures, or practices of organizations or groups of organizations that impact outcomes across learners.
- The final layer of the mapping includes 3 measures related to **equity**. The measures focus on aspects detailing disparities and inequities within the practices, investments, and policies of Minnesota's education and workforce systems. This layer is all-encompassing and has impacts on each of the subsequent layers.

In total, workgroup members identified and assessed 122 metrics – too many for the P-20 Education Partnership to use in reporting and setting a strategic agenda. The workgroup next prioritized the metrics, or in the words of leadership, "identified the areas of pain for Minnesota".

Figure A1. Individual Learner Measures

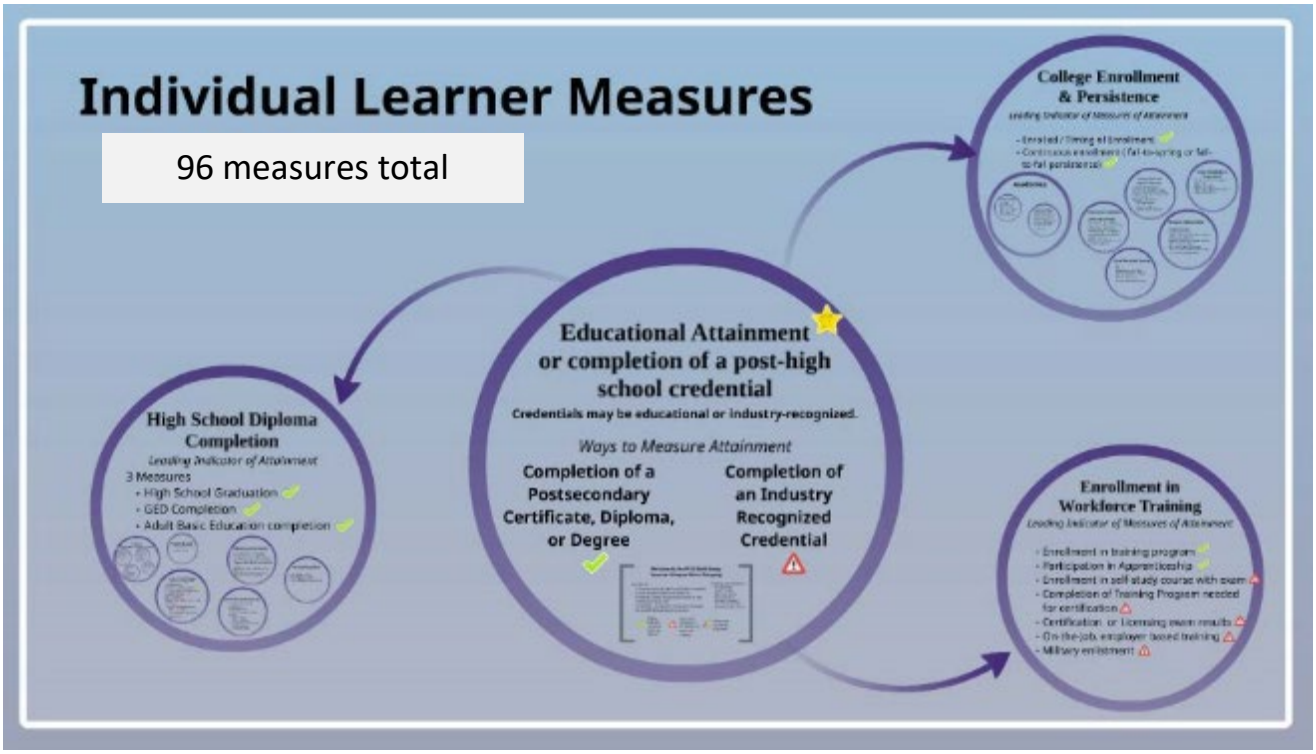


Table A1. Individual Metrics Spanning the Learner Lifespan

#	**Area**	**Metric**
1	Kindergarten readiness	Kindergarten Readiness Assessment
2	Kindergarten readiness	Kindergarten Entry Profile
3	Kindergarten readiness	Display of Age Expected Behaviors (Child Outcome Summary Form)
4	Kindergarten readiness	Early Childhood Screening
5	Kindergarten readiness	Display of Age Expected Skills (ECSE)
6	Kindergarten readiness	Minnesota Early Childhood Indicators of Progress
7	Early Care and Education	Participation in early care and education
8	Early Care and Education	Participation in early childhood special education
9	Early Care and Education	Early childhood screens (Birth-Age 5, multiple systems and providers)
10	K-12 Results / Assessments	Reading proficiency
11	K-12 Results / Assessments	Math proficiency
12	K-12 Results / Assessments	ACT/SAT composite score
13	K-12 Results / Assessments	ACT/SAT college readiness benchmarks
14	K-12 Results / Assessments	ACT/SAT scores needed for college admissions
15	K-12 Results / Assessments	Assessment scores for placement into developmental education
16	K-12 Results / Assessments	High School grade point average
17	K-12 Results / Assessments	Timely high school graduation
18	K-12 Results / Assessments	Adult literacy levels

#	Area	Metric
19	K-12 Academic Activity	Participation in dual credit (advanced placement, international baccalaureate, PSEO, concurrent enrollment)
20	K-12 Academic Activity	Participation in career and technical education
21	K-12 Academic Activity	Core courses attempted / completed
22	K-12 Academic Activity	High School credit accumulation
23	K-12 Education Stability	Attendance (days attended / absent)
24	K-12 Education Stability	5+ absences in first quarter
25	K-12 Education Stability	Removal from learning (suspensions, out of classroom time)
26	K-12 Education Stability	Change in school
27	K-12 Education Stability	Dropout
28	K-12 Parents / Family	Parent (family) satisfaction with child's education
29	K-12 Teachers, School Support Staff & Caring Adults	Quality teachers
30	K-12 Teachers, School Support Staff & Caring Adults	Teachers who look like me
31	K-12 Teachers, School Support Staff & Caring Adults	Caring adult/mentor-like adult outside the home
32	K-12 Teachers, School Support Staff & Caring Adults	Peer network
33	K-12 Teachers, School Support Staff & Caring Adults	Engagement with teachers and peers
34	K-12 Teachers, School Support Staff & Caring Adults	Access to school counselors (Has a counselor, Counselor has time for the student)
35	K-12 Social-Emotional Learning	Commitment to learning
36	K-12 Social-Emotional Learning	Positive identity
37	K-12 Social-Emotional Learning	Social competence
38	K-12 Social-Emotional Learning	Core SEL competencies (varies by age, includes self-awareness, self-management, responsible decision-making, social awareness, relationship skills)
39	K-12 College/Career Knowledge	Exposure to college & career pathways
40	K-12 College/Career Knowledge	Receives information, instruction, and assistance on creating a college & career plan
41	K-12 College/Career Knowledge	Has a post-high school college & career plan
42	K-12 College/Career Knowledge	Participate in work experiences or work-based learning
43	K-12 College/Career Knowledge	School culture related to college and career aspirations

#	Area	Metric
44	K-12 College/Career Knowledge	Navigational capital or understanding of college access and success process
45	K-12 Financial Preparation	Has a financial plan
46	K-12 Financial Preparation	Completes the FAFSA or state financial aid application
47	K-12 Financial Preparation	Has a college savings account
48	College Enrollment and Persistence	Enrolled / timing of enrollment
49	College Enrollment and Persistence	Continuous enrollment (fall-to-spring or fall-to-fall persistence)
50	College Academic Activity	Full-time/part-time
51	College Academic Activity	Credits completed in first year
52	College Academic Activity	Percent of credits completed
53	College Academic Activity	Credits accepted at entry
54	College Academic Activity	Completion of college level math class
55	College Academic Activity	Completion of college level English class
56	College Academic Activity	Developmental education participation (credits attempted, credits completed, subject area)
57	College Academic Results	Credits completed in first year
58	College Academic Results	Cumulative credits completed
59	College Academic Results	Progress to graduation (credits completed minus credits not applicable to program requirements)
60	College Academic Results	College grade point average
61	College Academic Results	Learner outcomes, skills or competencies acquired (technical skills, cognitive skills)
62	College Non-Cognitive & Other Skills	Intrinsic motivations (Grit - sustained perseverance and passion for long-term goal)
63	College Non-Cognitive & Other Skills	Navigational capital or understanding of college success process
64	College Non-Cognitive & Other Skills	Time management
65	College Education Stability	College dropout/stop-out
66	College Education Stability	Transfer between colleges
67	College Education Stability	Successful/unsuccessful transfer
68	College Education Stability	Change in program/major
69	College Education Stability	Educational swirl (enrolling in multiple institutions without making progress)
70	College Education Stability	Fit (educational choices match educational goals)
71	College Faculty, Staff, and Support Networks	Support network present
72	College Faculty, Staff, and Support Networks	Peer-to-peer network, activity

#	Area	Metric
73	College Faculty, Staff, and Support Networks	Positive engagement with faculty, staff, and peers
74	College Faculty, Staff, and Support Networks	Engagement activities (work on campus, live on campus, extracurricular activities)
75	College Finances / Affordability	Has a financial plan
76	College Finances / Affordability	Completed the FAFSA or aid application
77	College Finances / Affordability	College cost (cost of attendance, tuition & fees, living expenses)
78	College Finances / Affordability	Available resources for college (savings, work, credit/borrowing)
79	College Finances / Affordability	Net cost of college, affordability
80	College Finances / Affordability	Annual / cumulative educational loans
81	College Finances / Affordability	Hours worked while enrolled
82	College Career Knowledge & Preparation	Preparation for careers and job placement
83	College Career Knowledge & Preparation	Has a career plan
84	College Career Knowledge & Preparation	Participate in work experiences or work-based learning
85	Enrollment in Workforce Training	Enrollment in training program
86	Enrollment in Workforce Training	Participation in apprenticeship
87	Enrollment in Workforce Training	Enrollment in self-study course with exam
88	Enrollment in Workforce Training	Completion of training program needed for certification
89	Enrollment in Workforce Training	Certification or licensing exam results
90	Enrollment in Workforce Training	Received on-the-job, employer based training
91	Enrollment in Workforce Training	Military enlistment
92	Employment	Job placement, employment rates, and wages
93	Employment	Unemployment rates
94	Employment	Workforce supply & demand, job vacancy rate
95	Employment	Employee tenure
96	Employment	Return on investment

Figure A2. Social and Economic Context Measures

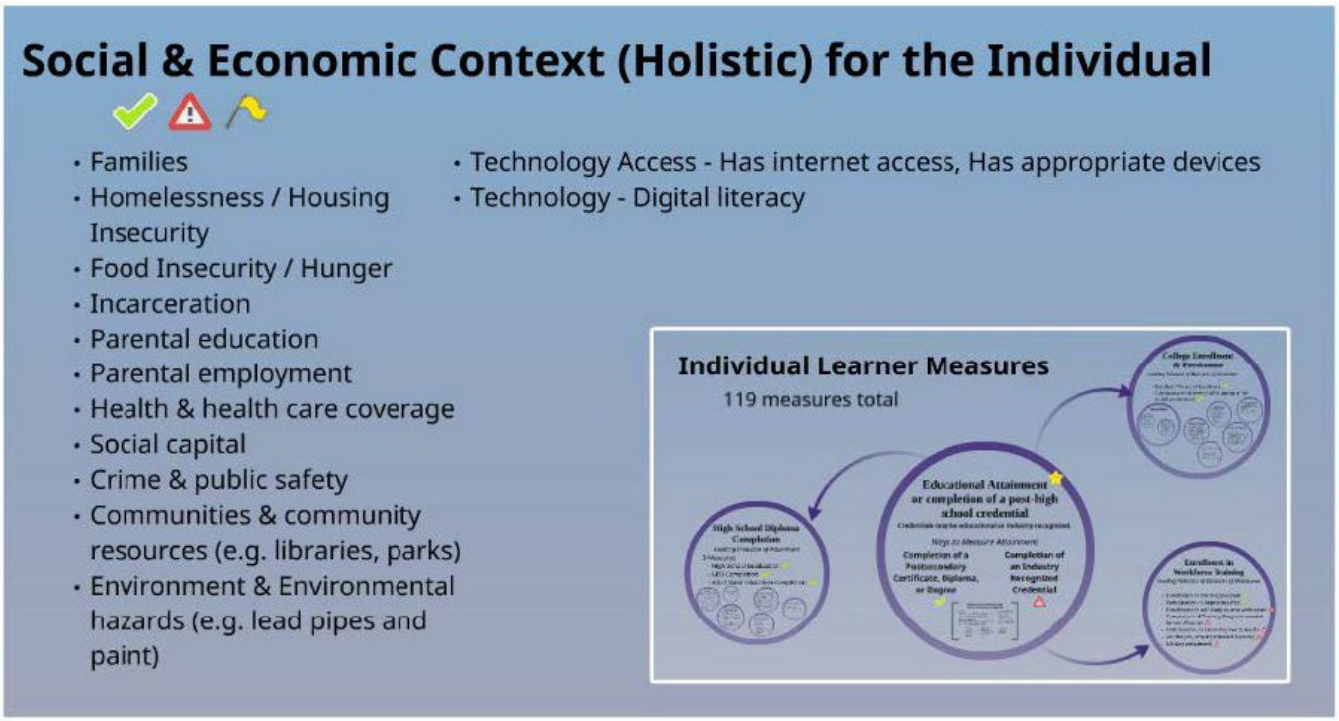


Table A2. Social & Economic Context Metrics Spanning the Learner Lifespan

#	Area	Metric
97	Social & Economic Context	Families
98	Social & Economic Context	Homelessness / Housing Insecurity
99	Social & Economic Context	Food Insecurity / Hunger
100	Social & Economic Context	Incarceration
101	Social & Economic Context	Parental Education
102	Social & Economic Context	Parental Employment
103	Social & Economic Context	Health & health care coverage
104	Social & Economic Context	Social capital
105	Social & Economic Context	Crime & public safety
106	Social & Economic Context	Communities & community resources (e.g. libraries, parks)
107	Social & Economic Context	Environment & environmental hazards (e.g. lead pipes and paint)
108	Social & Economic Context	Technology Access (Has internet access, Has appropriate devices)
109	Social & Economic Context	Technology - Digital Literacy

Figure A3. Organization and System Measures

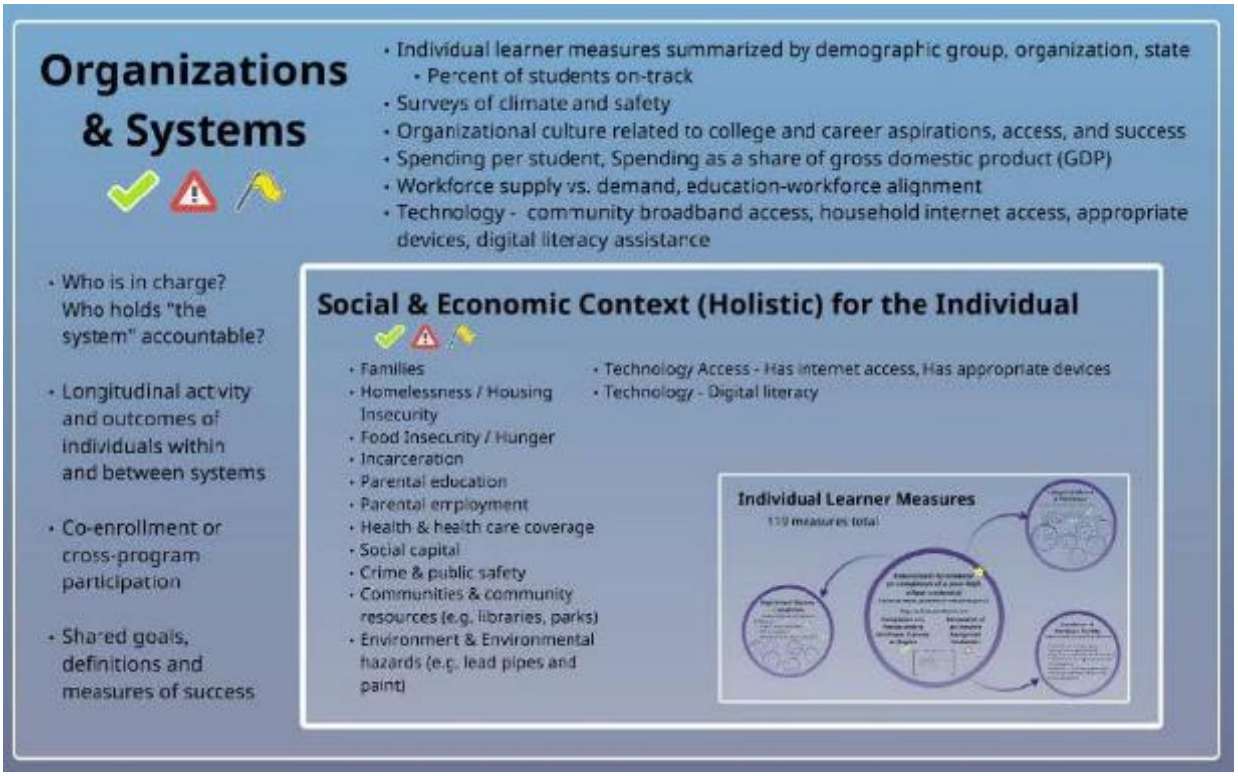


Table A3. Organization & System Metrics Spanning the Learner Lifespan

#	Area	Metric
110	Organizations & Systems	Individual learner measures summarized by demographic groups, organization, state (Percent of students on-track)
111	Organizations & Systems	Surveys of climate & safety
112	Organizations & Systems	Organizational culture related to college and career aspirations, access, and success
113	Organizations & Systems	Spending per student, Spending as a share of gross state product (GSP)
114	Organizations & Systems	Workforce supple vs. demand, education-workforce alignment
115	Organizations & Systems	Technology - community broadband access, household internet access, appropriate devices, digital literacy assistance
116	Organizations & Systems	Who is in charge? Who holds "the system" accountable?
117	Organizations & Systems	Longitudinal activity and outcomes of individuals within and between systems
118	Organizations & Systems	Co-enrollment or cross-program participation
119	Organizations & Systems	Shared goals, definitions and measures of success

Figure A4. Equity Measures

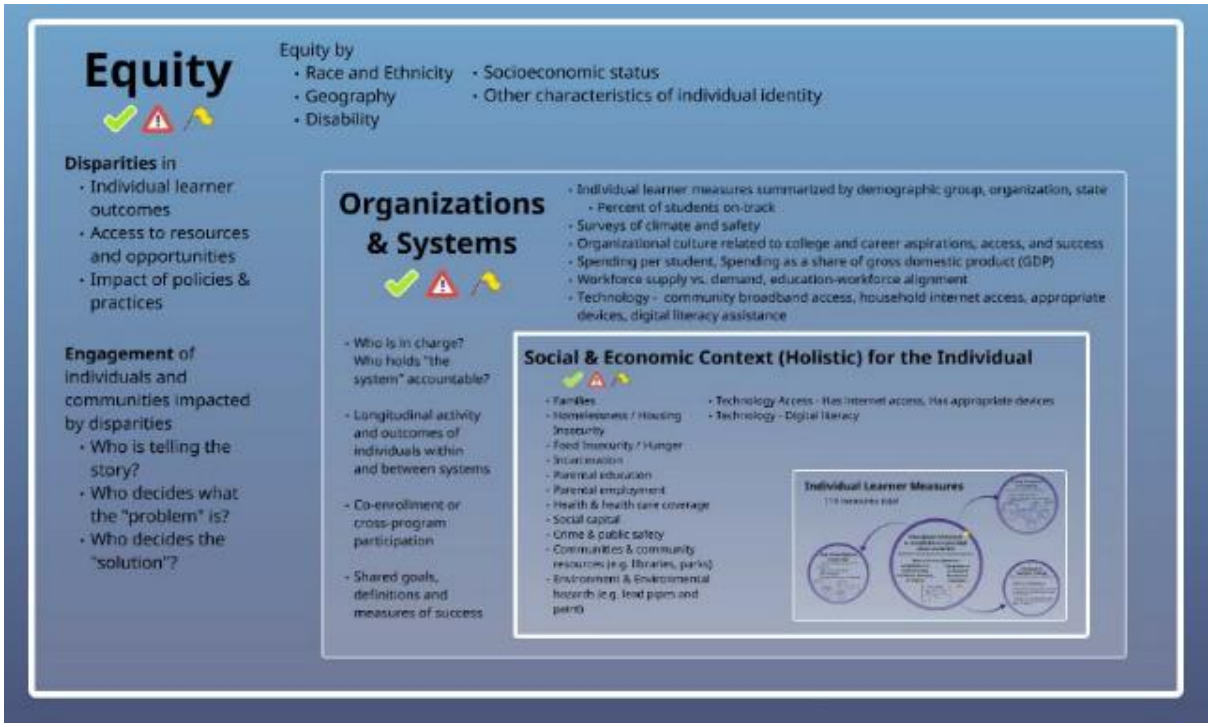


Table A4. Equity Metrics Spanning the Learner Lifespan

#	Area	Metric
120	Equity	Equity by: • Race and Ethnicity • Geography • Disability • Socioeconomic status • Other characteristics of individual identity
121	Equity	Disparities in: • Individual learner outcomes • Access to resources and opportunities • Impact of policies & practices
122	Equity	Engagement of individuals and communities impacted by disparities: • Who is telling the story? • Who decides what the "problem" is? • Who decides the "solution"?

Appendix B. Values-based Priority Setting Discussion

Value-based priority setting asks workgroup members to identify measures representing focus areas for their organizations. Members are not asked if the measures chosen are feasible or available but rather focus on the ideal measures. Measures chosen indicate that the member organizations see the need to improve outcomes in the area chosen and that the area aligns to the desired outcome for the state's education attainment goal as directed by the P-20 Education Partnership.

To do values-based priority-setting, each workgroup member was asked to identify one measure for each of the following:

- If we don't fix this, we won't succeed.
- This shows our system is not working for communities of color.
- This is so basic, why haven't we addressed this?

Metrics drew on existing data as much as possible. The metrics presented are suggestions based on the workgroup's understanding of the Partnership's intent. The purpose of this document is to provide information that will inform the discussion of data needed for informing policy and planning.

Values-based priority setting by workgroup members identified 24 measures representing focus areas from the perspective of their organizations or professional expertise.

If We Don't Fix This, We Won't Succeed

Members were asked to identify their highest priority area for improving attainment rates and closing equity gaps in educational attainment. Members identified the following measures as highest priority.

1. Address systems failures that push out (or fail to pull in) learners who exit (drop out) in K-8, high school, college, and work, specifically for American Indian Minnesotans.
2. Kindergarten readiness
3. Early grade reading proficiency
4. Middle grade math proficiency
5. Social-emotional learning
6. High school completion
7. Post-secondary completion
8. The system lacks shared cross-system definition of Kindergarten, College, and Career Readiness developed, agreed to, and committed to by all stakeholders.
9. College affordability

This shows our system is not working for communities of color.

Members were asked to identify from the perspective of individuals and communities of color the highest priority area for improving attainment rates and closing equity gaps in educational attainment. Members identified the following measures as highest priority.

10. Persistent lack of teacher and faculty diversity
11. Inequity of enrollment in rigorous courses
12. Inequity in credit acceptance
13. Inequity in enrollment into development education courses
14. Addressing the student's holistic needs
15. Inequity in employment and income
16. Lack of effective engagement with targeted communities

This is so basic, why haven't we addressed this?

Members were asked to identify the most basic focus areas for improving attainment rates and closing equity gaps in educational attainment. These areas have wide ranging impact on students we serve, and with attention could provide quick wins for improving educational attainment.

17. Credit acceptance/transfer
18. Planning for Career (and College)
19. Let disaggregated data drive meaningful continuous improvement
20. College persistence/retention
21. Early care & education - Every child has an early childhood education program.
22. Technology
23. Transitions between K-12 or higher education and work
24. Summer learning loss

Appendix C. Metrics Explored

The workgroup compiled detail on identified metrics for this report. The metrics chosen contribute to improving levels of educational attainment for Minnesotans. For each metric, the information provided includes:

- Metric overview and background for its choice

Each metric is explained and its importance in improving educational attainment rates is identified.

- Technical definition

Each metric's technical definition is included to allow members to understand how the metric is calculated and the cohort used for calculation when applicable.

- Data source and availability

Each metric's data source is identified and the availability of the data outlined (schedule of data updates, available for state level analysis or local level analysis).

- What is this metric intended to measure?

Members emphasized the extent to which metrics should be appropriately used. As such, each metric includes an explanation of what it is intended to measure.

- Who has influence over the outcomes of this metric?

To use a metric in setting a strategic agenda, it is critical that member organizations have the ability to influence the outcomes of the metric, preferably directly or indirectly. While a brief explanation of influence is included, this question is best answered through discussion with members as it involves questions of organizational authority and commitment to action.

- Disaggregation by race and ethnicity, gender, geography, and income

To ensure usability, each metric should be able to be disaggregated by subpopulation of focus, including race and ethnicity, gender, geography, and income.

- Context for metric and usage

Each measure should identify the context for use.

- Limitations and Caveats

Importantly, the limitations and caveats to use should also be taken into consideration.

- Starting strategies

Finally, as the metrics chosen will inform a strategic action plan for the P-20 Education Partnership, each metric should include a discussion of strategies to improve outcomes. These strategies will be based on research and likely need to be adapted to Minnesota's context and organizations willing to take action.

- Benchmarks

While important to include, benchmarking is not discussed in the metric summaries developed for this report. Benchmarking each metric for comparison purposes and to measure progress requires P-20 Education partnership members to identify the target outcome or goal for the metric. For example, should the goal be to increase high school graduation rates for 9th graders of color and indigenous students then the appropriate benchmark may be to assess rates for each student group over time. If the goal is to increase the overall rate, then it may be appropriate to compare to other states.

Using Data to Set the Agenda: A word of caution

A common misstep in using data to drive an agenda involves using data to identify problems without digging deeper into why the problem is occurring. Data alone cannot provide answers, it is important to consider carefully and collaboratively the causal factors and root causes for observed outcomes.

- Causal factors: conditions that contribute to an outcome. If causal factors are not present, the outcome would be different.
- Root cause: primary factor that produces an outcome. If the root cause was not present, the outcome would not occur.

When a problem is observed, stakeholders may want to move quickly to develop solutions. In moving too quickly, chosen solutions could be addressing a misunderstood problem and therefore be ineffective. Rather, stakeholders should reflect on why they might be observing the outcomes they do, or in other words: what is the story behind the data; what are the factors leading to what we see? The Actionable Intelligence for Social Policy (AISP) initiative at the University of Pennsylvania provides a guide to factor analysis;

- Define the current outcomes for a population and relevant subgroups of a population (e.g., race, ethnicity, gender, race and gender);
- Identify causal factors. Collaboratively identify what is contributing to the outcomes. Gains being made: What is contributing to the bright spot? No gains: What is happening? Where is the population/subgroup losing ground?; and
- Get to the underlying root causes. Ask “Why?” five times to understand the causal factors and the problem and solutions for the whole population or subgroup(s). What is the underlying reason the problem or solution is occurring? What is helping to shape the underlying reason?

For the 24 metrics we offer in this report, we encourage you to ask Why? Why? Why? Why? Why?

Early Childhood

METRIC 1: Participation in early childhood education

The working group chose this metric because research clearly demonstrates that access to a system of high-quality early care and education programs positively impacts educational outcomes in life. Children who are healthy and successful socially, emotionally, and academically have a better chance of becoming economically productive and engaged adult citizens. Children who attend programs that are inclusive of peers with different abilities, cultural backgrounds, and a range of economic backgrounds benefit from a variety of language models, increased respect for diversity, and preparation for life in an inclusive society. Early childhood education is a broad term used to describe any type of educational program that serves children before they are old enough to enter kindergarten.

Definition

> This metric is defined as the number of kindergartners for whom participation in early care and education is known, including settings in which children are cared for and taught by people other than the parents or primary caregivers with whom they live.

Data Source and Availability for Metric

> Data for this metric come from the Early Childhood Longitudinal Data System (ECLDS). The ECLDS links early education data from the Minnesota Department of Education with child care and family economic supports data from the Minnesota Department of Human Services.

What is this metric intended to measure?

> This metric measures the number of kindergartners known to participate in public programs and services. Known participation in an early childhood education program can then be linked to educational outcomes later in life.

Who has influence over the outcomes of this metric?

> This metric can be influenced by the availability of and funding for early childhood education programs and services, with particular focus on access for more disadvantaged communities.

Disaggregation

> This metric can be disaggregated by kindergarten school year, school district, county, gender, race/ethnicity, and participation in an income-based assistance program (Free/reduced price meals, Minnesota Family Investment Program, Diversionary Work Program, and Supplemental Nutrition Assistance Program). In addition, data can be reported by disability (MDE disability type, Minnesota Department of Health deaf/hard of hearing), home primary language, gender, English learner, and other factors (preterm birth, low birth weight, and child protection involvement).

When disaggregated, we see that known participation in public early childhood education programs range from 28% Native Hawaiian/Other Pacific Islander to 59% Black as shown in Figure C1 below.

Figure C1. Early Childhood Education Public Program Participation by Race/Ethnicity

Statewide, School Year: 2017-18

2018 Total Kindergartners = 68,079

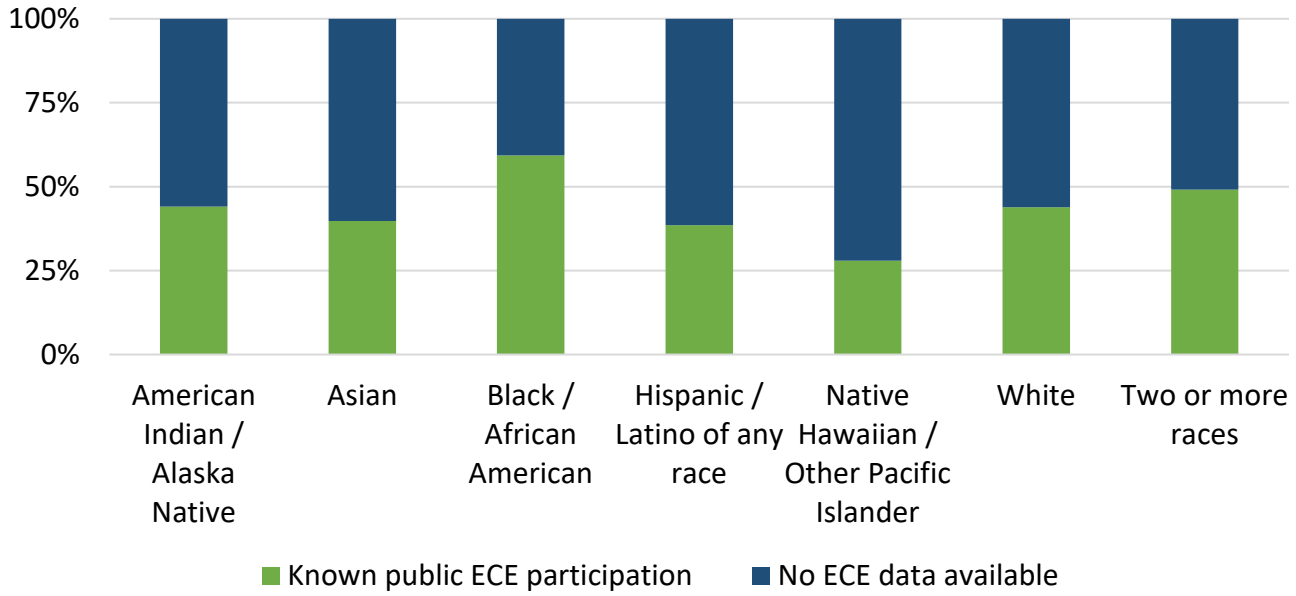


Table C1. Early Childhood Education Public Program Participation by Race/Ethnicity, Statewide, School Year: 2017-18

Race/Ethnicity	**Known public ECE participation**	**No ECE data available**
American Indian / Alaska Native	528 (44.1%)	670 (55.9%)
Asian	2,048 (39.8%)	3,102 (60.2%)
Black / African American	4,867 (59.3%)	3,344 (40.7%)
Hispanic / Latino of any race	2,536 (38.6%)	4,042 (61.4%)
Native Hawaiian / Other Pacific Islander	21 (28.0%)	54 (72.0%)
White	18,730 (43.8%)	23,992 (56.2%)
Two or more races	2,037 (49.1%)	2,108 (50.9%)

Source: Early Childhood Longitudinal Data System. (n.d.) Program Participation by Race/Ethnicity Statewide School Year: 2017-18 Retrieved 07/16/2020 from [ecIds.mn.gov/#childDemographics/orgId--999999000 groupType--state FISCAL_YEAR--2018 DISABILITY_T YPE--FOC_NONE_HOME_LANGUAGE--FOC_NONE_p--2]

Context for Metric and Usage

This metric relies on an understanding of the programs serving this population in support of healthy child development. Minnesota children and their families may participate in one or more public Early Care and Education (ECE) services designed to meet their health, educational, social and economic needs. The Minnesota Department of Education's division of Early Learning Services supports schools, communities, and districts to implement inclusive and comprehensive prenatal through 3rd grade systems aligned with World's Best Workforce. ECE services can include:

- Child Care Assistance Program: CCAP helps low-income families pay for child care so that parents can work or go to school.
- Early Childhood Family Education: ECFE provides parent education for parents (including expectant parents) and their children ages birth through third grade.
- Early Childhood Special Education: ECSE provides support and services to infants, toddlers, and preschool children with disabilities and their families.
- Minnesota Family Investment Program and Diversionary Work Program: MFIP/DWP are economic supports to low-income families.
- Supplemental Nutrition Assistance Program: SNAP (formerly also known as food stamps) provides families with supplemental resources to purchase food for their household. Families must be income-eligible.
- School Readiness: The School Readiness program, or "Minnesota District Prekindergarten" programs, are intended to prepare children for kindergarten. School Readiness Plus (SRP) is a fairly new early learning program, created in the 2017 legislative session, and targeted to four-year-olds demonstrating one or more risk factors. Voluntary prekindergarten (VPK) prepares children for kindergarten success. Funding allows school districts, and charter schools with MDE-recognized early learning programs, to incorporate a VPK program into their E-12 system.
- Early Learning Scholarships: Scholarships provide funding to increase access for three- and four-year-old children with the highest needs to high-quality early childhood programs with the goal of improving their school readiness. Limitations and Caveats

This metric is limited to the data that is available —children and families taking part in public programs and services. If a family utilizes only private child care and preschools, data is not available and participation is not known.

Starting strategies

Strategies include targeted outreach and investment, cultural integration to programs and curriculum, and an increase in program and policy leaders and educators from communities of color and indigenous communities. Art Rolnick and the Federal Reserve Bank of Minneapolis

have two decades worth of research on the return on investment to early childhood care and education.

- Within Minnesota, recent investments in programs and policies targeted at increasing early education program access for low-income children like CCAP, Head Start, VPK, SRP, and Early Learning Scholarships, have successfully increased access for children of color. Additional targeted investments in these communities would continue to improve affordability and access while supporting cultural identity. CCAP is successfully reaching the target populations that benefit most from access to stable, high-quality child care while parents work to improve family economic stability. This evidence demonstrates that CCAP is a key to success for many young, lower income children and children of color, and there is opportunity for expansion of services and benefits, if supported by more funding.
- A key recommendation by the Office of the Legislative Auditor is for the legislature to consider aligning the funding and eligibility requirements of certain early childhood programs to make them more understandable and efficient. This change may increase access.
- Given the low participation rates for many populations of color and low-income children in ECSE, there is an opportunity for outreach to families in these communities whose children are likely eligible for ECSE. Providing intervention services early will decrease the likelihood of needing those services later on -a benefit to the family and child, as well as cost savings to the state.

Resources:

Early Childhood Programs, 2018 Evaluation Report, Minnesota Office of the Legislative Auditor, https://www.auditor.leg.state.mn.us/ped/pedrep/earlychildhood.pdf

The Federal Reserve Bank of Minneapolis, Early Childhood Development, https://www.minneapolisfed.org/topic/early-childhood-development

METRIC 2: Early Childhood Screening

We chose this metric because early childhood screening is a simple process that measures a child's developmental status, and a child may be referred for a more in-depth health assessment, diagnostic assessment, or educational evaluation as a result of early childhood screening.

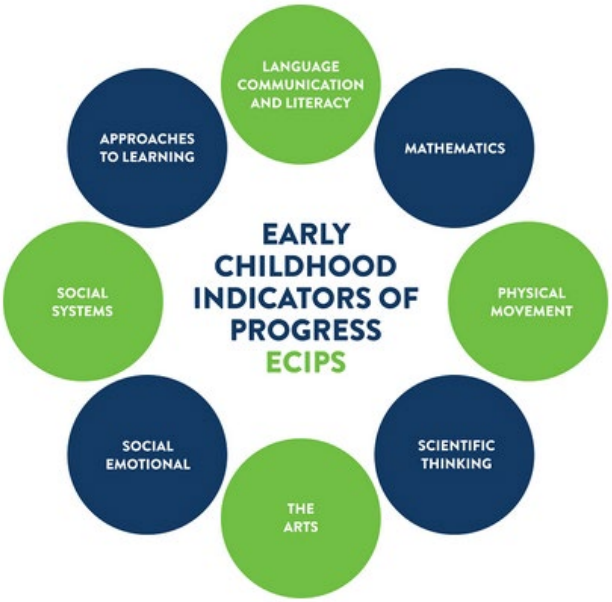
Minnesota children receive a free early childhood screening by their school district prior to entering public kindergarten and it is required by most private kindergarten programs as well. Through the Early Childhood Health and Developmental Screening program (ECS), children must receive a free early childhood screening between age 3 and no later than 30 days after entering public kindergarten, or within 90 days when attending other early learning programs. The screening requirement may be met by completing a comparable screening through a school district, Head Start, Child and Teen Checkups, or a health care provider. Screening is a simple process that measures a child's developmental status, and a child may be referred for a more in-depth health assessment, diagnostic assessment, or educational evaluation as a result of ECS. Children and their families may also be referred to free early learning opportunities and resources, such as Early Childhood Special Education (ECSE), Head Start, Early Childhood Family Education (ECFE), prekindergarten programs, early learning scholarships, and/or home visiting programs.

Programs and services that assess the development and learning status of young children may do so in a variety of ways. Decades of research has shown that the most thorough assessments of young children address multiple areas or "domains" of learning and development. The Early Childhood Indicators of Progress (ECIPs), Minnesota's early childhood learning standards, are a common set of developmentally appropriate expectations for children age birth to kindergarten aligned with kindergarten academic standards. It is important to remember, however, that the ECIPs are not an assessment tool.

Definition

> The ECS kindergarten cohort report available in MDE's Data Center reflects the selected state fiscal year and looks back to determine the age at which children were screened. The report also includes the totals of kindergartners not screened. The Birth-4 year census is used as the estimate of three, four, and five year olds within the district.
>
> The ECIPs are used across multiple sectors of the Minnesota early childhood system. They provide consistency and coherence for children, families, teachers, and administrators. While they are universal benchmarks, the ECIPs are not intended to be used as curriculum or assessment tools.

Figure C2. Early Childhood Indicators of Progress (ECIPs)



Data Source and Availability for Metric:

Early childhood screening results are available at the state level, with districts reporting the numbers of kindergartners who have and have not been screened, and the age at which they were screened. That data is available by district in MDE's Data Center, and will also be available in select public reports on the ECLDS in 2021.

What is this metric intended to measure?

This metric evaluates the physical, emotional, and cognitive skills of young children to identify possible interventions that might positively impact their kindergarten readiness. ECS intends to 1) promote healthy development, 2) identify children who may need further evaluation, and 3) connect families to resources in the community.

Who has influence over the outcomes of this metric?

Children's skills and development are strongly influenced by families and through interactions with other people and their environments, early learning experiences, and participation in early learning programs (including intervention programs) prior to enrolling into school.

Disaggregation

The early childhood screening data is disaggregated by school district and age at which screening was done. However, we anticipate that the ECLDS early childhood screening reports that are currently in progress will be available in 2021. These reports will include some ability to disaggregate by race/ethnicity, gender, home language, and other criteria.

Context for Metric and Usage:

This metric relies on an understanding that:

- children served through Early Childhood Special Education (ECSE) may be screened within ECSE;
- it is possible for the Census district, Screening District, and ECSE serving district to be all separate districts;
- the number of children screened after the start of kindergarten can be duplicated counts if reported by age;
- children may be screened multiple times within a year at parent request;
- currently collected data reflects children enrolled in public schools only, and does not include children screened who attend private schools;
- those 'Not screened by end of kindergarten' is a subset of those 'Not Screened within 30 days of kindergarten start' and;
- kindergartners attending charter schools are not required to receive a screening, unless the charter elects to provide a screening program

Limitations and Caveats

Early childhood screening data is limited to 1) which children were screened or not and 2) at the age at which children were screened. While the ECIPs are important for benchmarking a child's development, they are not used in formal assessment, children are not given scores, and there is no official tracking of a child's development according to the ECIPs.

Starting strategies

Strategies should focus on the importance of widespread outreach regarding the purpose and practices of ECS. There is skepticism, especially in immigrant communities, about what ECS is truly intended to accomplish: some communities fear ECS unfairly labels children, harming their ongoing opportunities for educational equity. By continuing to educate families of all backgrounds about ECS, more children could be screened at age three.

Additionally, encouraging parents and caregivers statewide to become familiar with the ECIPs could aid in earlier identification of children who may benefit from developmental interventions and help parents understand the purpose of ECS.

Resources:

Early Childhood Indicators of Progress: Minnesota's Early Learning Standards: Birth to Kindergarten, January 2017, MDE Early Learning Services website, https://education.mn.gov/MDE/dse/early/highqualel/ind/

Minnesota Department of Education, Early Childhood Screening https://education.mn.gov/MDE/fam/elsprog/screen/

METRIC 3: Kindergarten ready

We chose this metric because the early years of a child's life are crucial for creating a foundation for life-long learning and success. The Minnesota Department of Education utilizes two broad guidelines for kindergarten readiness. The first guideline, based on statute, states that a child is eligible for kindergarten entry when he/she:

- Is at least 5 years of age by September 1 of the child's enrollment year (Minnesota Statutes, section 120A.20).
- Has received early childhood screening (Minnesota Statutes, section 121A.17).
- Has received medically acceptable immunizations (Minnesota Statutes, section 121A.15).

The second guideline, developmental readiness, takes into account the status of a child's knowledge and skills across multiple learning areas at the time of their kindergarten entry. These learning areas include social and emotional, math/science/social studies, physical development, the arts, and language/literacy/communication.

For purposes of this report, developmental readiness at kindergarten entry is the guideline with greater influence on educational outcomes post-kindergarten.

Definition

> The Kindergarten Entry Profile (KEP) Initiative offers districts/charter schools a choice of MDE-approved comprehensive, developmentally appropriate assessments that help teachers understand what students know and are able to do at the start of kindergarten (as well as throughout the entire kindergarten year) to support their success in kindergarten and beyond. It is a voluntary standards-based assessment system aligned with the ECIPs. There is no single statewide assessment tool, but rather districts can choose from one of multiple tools recommended by MDE, which are psychometrically aligned with one another.
>
> The purpose of the KEP Initiative is to provide schools with meaningful data about their students' learning that can be used to 1) measure what children know and are able to do at the beginning of kindergarten; 2) tailor instruction based on each student's strengths and areas of growth; and 3) inform decisions about practice and programming so that schools are ready to support the success of all kindergartners. These assessment tools provide teachers with multiple opportunities--over an 8-10 week period--to observe students demonstrating their knowledge and skills within their regular educational routine—referred to as "authentic" assessment because it occurs during and within the natural learning setting). Young children are often unable to demonstrate a skill "on demand," and so providing multiple opportunities for students to do so is imperative. Authentic assessment also allows students to demonstrate skills both verbally and nonverbally, which can be important for English learners and students who have significant delays or disabilities.

Data Source and Availability for Metric:

Data on the status of children at kindergarten entry in relation to the ECIPs are part of the Kindergarten Entry Profile (KEP). Because the KEP Initiative is not required but allows districts to opt in, data for this metric is not available at a state level. Less than 10% of Minnesota school districts participate in the KEP Initiative. Many other school districts and charter schools assess students for kindergarten readiness, but use tools other than those MDE has approved for validity and reliability.

Data for this metric is not available at a state level. In addition, no data were collected in fall 2019.

What is this metric intended to measure?

This metric measures the physical, emotional and cognitive readiness of children (among other characteristics) at the point of kindergarten entry.

Who has influence over the outcomes of this metric?

Children's skills and development are strongly influenced by their families and through their interactions with other people and environments, early learning experiences, or participation in early learning programs or child care prior to enrolling into school. Thus this metric is influenced by availability of and access to quality early care and education program.

Disaggregation

Because this data is not collected at a state level, we do not have information about how it might be disaggregated.

Context for Metric and Usage:

This metric relies on an understanding that this metric should not be used to measure performance of a program or school. That is, the measure assesses the status of children as they enter kindergarten, not the status of children after they have participated in kindergarten. The percent of children who are ready or not ready for learning at the time of kindergarten entry is not useful as child development at this early stage is highly variable.

Limitations and Caveats

Schools and districts can choose to administer the assessment to all students or a sample of students. Using a voluntary sample prohibits the ability to generalize findings to all students. Since the KEP is not statewide and is only a voluntary sample, metrics have not been established that can be reasonably applied across the state. Data submitted to MDE constitutes a sample too small and unscientifically constructed to be representative of kindergartners across the state preventing conclusions from being drawn.

In addition, not all kindergarten entry assessment tools are considered to address all developmental areas equally well. This metric should be limited to assessment progress monitoring tools well aligned to the ECIPS and designed to help educators screen, monitor progress, and analyze reading skills of students from kindergarten to fifth grade.

Starting strategies

Strategies could focus on continuing to ensure that all children, and especially children whose families have complex needs, are able to access high quality early care and education prior to kindergarten. To ensure data for understanding the developmental readiness of Minnesota children, the state could implement and fund mandatory statewide Kindergarten Entry Profile participation and data submission for all schools and districts, and all children.

Resources:

Early Childhood Programs, 2018 Evaluation Report, Minnesota Office of the Legislative Auditor, https://www.auditor.leg.state.mn.us/ped/pedrep/earlychildhood.pdf

Early Childhood Indicators of Progress: Minnesota's Early Learning Standards: Birth to Kindergarten, January 2017, MDE Early Learning Services website, https://education.mn.gov/MDE/dse/early/highqualel/ind/

Minnesota Department of Education, Kindergarten Entry Profile (KEP), https://education.mn.gov/MDE/dse/kind/KEP/index.htm

K-12

METRIC 4: Early grade (3rd Grade) reading proficiency

We chose this metric because early reading proficiency is an important milestone in a child's education experience. Minnesota identified the end of grade three as the starting point for assessing proficiency in reading for all students. Reading well by third grade is essential as an important point at which students are able to apply skills and strategies from a variety of texts. Reading is not just knowing and combining letters, sounds and words, it is a process of making meaning from text.

Definition

> This metric is defined as the number or percent of students identified as proficient on the Grade 3 Reading MCA test. Scores on the Minnesota Comprehensive Assessment (MCA) are categorized as "does not meet the standards", "partially meets the standards", "meets the standards", and "exceeds the standards." Proficiency is defined by meeting or exceeding grade-level standards.
>
> An alternative measure would be progression to proficiency - early grade reading. For the purposes of ESSA accountability, academic progress refers to students increasing their learning relative to grade-level standards. Measuring academic progress provides key information about students' mastery of standards and system-level effects beyond that which can be learned by looking at proficiency levels alone. It is important to not only understand whether students are proficient, but also to know the improvement of each student from year to year.

Data Source and Availability for Metric

> Data for this metric comes from the Minnesota Comprehensive Assessment (MCA) for grade three. Data are reported on the Minnesota Report Card (statewide measures) and the ECLDS in relation to birth outcomes and other child criteria.

What is this metric intended to measure?

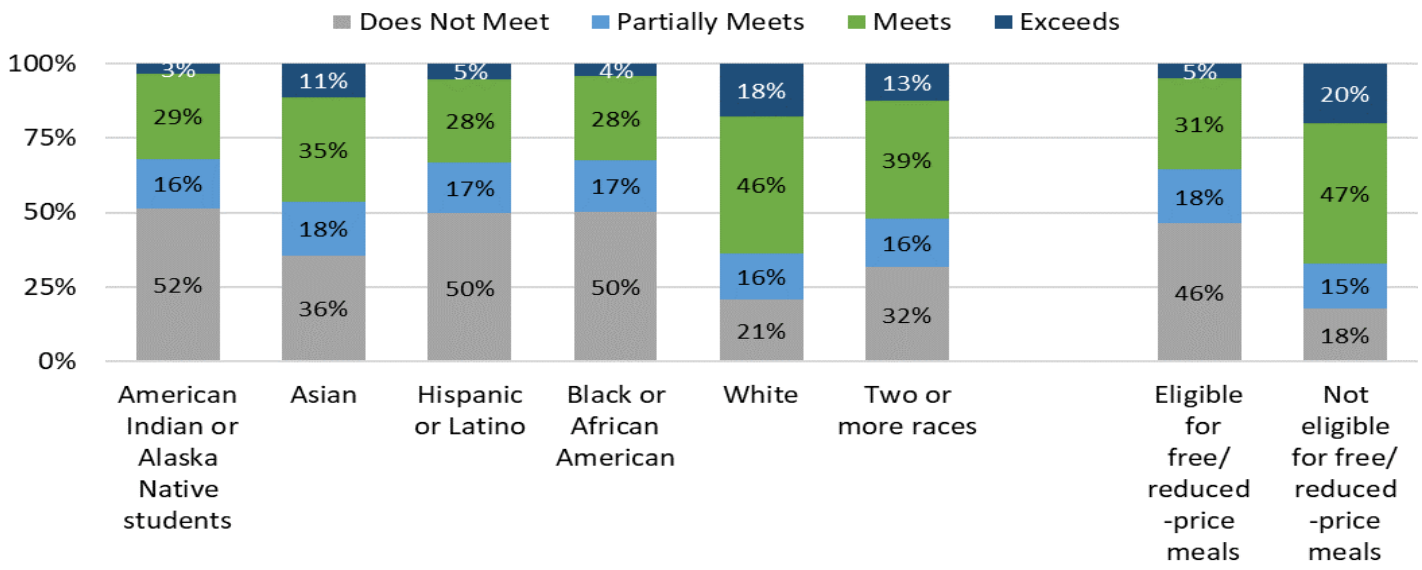
> This metric measures reading skills development by grade three.

Who has influence over the outcomes of this metric?

> This metric is influenced by literacy skills in pre-kindergarten and the grades prior to grade three, the availability of books in the home and parents reading to young children to establish a value of literacy in the home and love of reading.

Disaggregation

Figure C2. Student Achievement Level, 2019, Third Grade Reading, All Accountability Tests



Source: Minnesota Department of Education

When disaggregated, we see a lower percentage of students of color and American Indian/Native American students meeting or exceeding proficiency levels as compared to their white peers. Similar gaps in proficiency are seen when comparing students eligible for free and reduced price meals as compared to students not eligible as shown in Figure C2.

Context for Metric and Usage

This metric relies on an understanding of K-12 testing, the appropriate uses of test scores, and how to interpret test scores. MCA results are not intended to be used as the only evidence to inform decisions or to assess student learning or abilities. Summative assessments like the MCA provide information on a broader level, and are not serving their intended purpose if they are individualized in the same way as teacher-designed formative assessments. The use of state assessment data as the only piece of evidence to justify decision making, or to target individual student growth is not an effective practice, and can be detrimental to student learning.

Limitations and Caveats

Interpretation of MCA data is limited by an increasing number of students whose parents choose to “opt out” of standardized testing. This results in differential types of students who participate in the test.

New, more rigorous achievement standards were implemented in 2011 for mathematics and in2013 for reading. For this reason, comparisons between the percentages of students who scored proficient in mathematics from 2010 to 2011 and in reading from 2012 to 2013 should be made only when keeping in mind the standards changed from one year to the next.

Starting strategies

Strategies could include ongoing funding and supports for targeted initiatives such as Read Well by Third Grade; early intervention strategies and programming that continue to engage young children in the importance of learning and developing literacy skills in particular; and providing supports to classroom teachers to meet the literacy and pre-literacy and reading skills of young students.

Resources:

Minnesota Department of Education, Early Reading Proficiency (Reading Well by Third Grade) https://education.mn.gov/MDE/dse/prof/

Minnesota Department of Education, Testing 1,2,3 website https://testing123.education.mn.gov/TEST/index.htm

Generation Next https://gennextmsp.org/

Minnesota Department of Education, Minnesota Report Card https://rc.education.mn.gov

Minnesota Early Childhood Longitudinal Data System, http://ecIds.mn.gov/

METRIC 5: Middle grade (5th Grade) math proficiency

We chose this metric because the Minnesota K-12 Academic Standards in Mathematics are grounded in the belief that all students can and should be mathematically proficient. All students need to learn important mathematical concepts, skills and numeracy relationships with understanding. The standards describe a connected body of mathematical knowledge that students earn through the processes of problem-solving, reasoning and proof, communications, connections and representation. The standards are grouped by three strands: 1) Number and Operation; 2) Algebra; 3) Geometry and Measurement; and 4) Data Analysis and Probability.

Definition

Scores on the MCA are categorized as "does not meet the standards", "partially meets the standards", "meets the standards", and "exceeds the standards". Proficiency is defined by meeting or exceeding the grade-level standards. This metric is defined as the number or percent of students categorized as proficient on the MCA Math test for grades 6, 7, and 8.

An alternative measure would be progression to proficiency - early grade reading. For the purposes of ESSA accountability, academic progress refers to students increasing their learning relative to grade-level standards. Measuring academic progress provides key information about students' mastery of standards and system-level effects beyond that which can be learned by looking at proficiency levels alone. It is important to not only understand whether students are proficient, but also to know the improvement of each student from year to year.

Data Source and Availability for Metric

Data for this metric comes from the Minnesota Comprehensive Assessment for mathematics administered in grades 3-8 and grade 11. The "middle grades" are defined as grades 6, 7 and 8.

What is this metric intended to measure?

Each grade level MCA is intended to assess learning appropriate to each grade level and progression of mathematical learning according to state standards. In particular, Achievement Level Descriptors provide the specific content required at each grade level. For example, for grade six, students are expected to show proficiency in relation to number and operation, algebra, geometry & measurement, data analysis.

Who has influence over the outcomes of this metric?

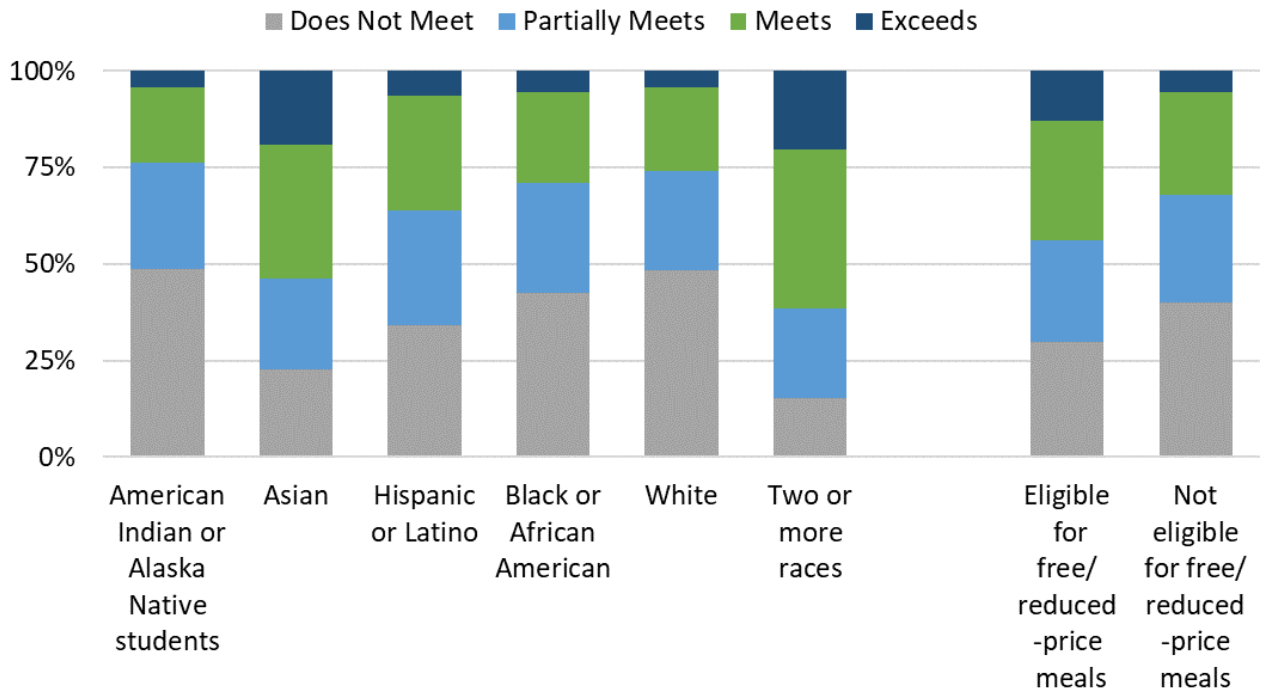
This metric is influenced by teachers, parents and communities as well as the specific interventions implemented in districts and schools aimed at improving mathematical mastery.

Disaggregation

When disaggregated, we see a lower percentage of students of color and American Indian/Native American students meeting or exceeding proficiency levels as compared to white

peers. Similar gaps in proficiency are seen when comparing students eligible for free and reduced price meals as compared to students not eligible as shown in Figure C4.

Figure C4. Student Achievement Level, 2019, Fifth Grade Math, All Accountability Tests



Source: Minnesota Department of Education

Context for Metric and Usage:

This metric relies on an understanding of the mathematics standards for each grade level and an understanding of the importance of teachers teaching to the mathematics standards and the appropriate interpretation and uses of test scores.

Limitations and Caveats:

Interpretation of MCA data is limited by an increasing number of students whose parents choose to “opt out” of standardized testing. This results in a differential sub-set of students to take the test.

New, more rigorous achievement standards were implemented in 2011 for mathematics and in 2013, for reading. For this reason, comparisons between the percentages of students who scored proficient in mathematics from 2010 to 2011 and in reading from 2012 to 2013 should be made only when keeping in mind that standards changed from one year to the next. In addition, during 2012 MDE implemented online testing and data may reflect multiple testing points for students.

Starting strategies

Strategies could include ongoing funding and supports for targeted initiatives, early intervention strategies and programming that continue to engage middle grade children in the importance of learning and developing mathematics skills in particular; and providing supports to classroom teachers to meet the mathematical needs of students.

Resources*:*

Minnesota Department of Education, Early Reading Proficiency (Reading Well by Third Grade) https://education.mn.gov/MDE/dse/prof/

Minnesota Department of Education, Testing 1,2,3 website https://testing123.education.mn.gov/TEST/index.htm

Generation Next https://gennextmsp.org/

Minnesota Department of Education, Achievement Level Descriptors https://education.mn.gov/MDE/dse/test/ald/

METRIC 6: Social-emotional learning

Individual student emotional and developmental skills impact academic success. Developmental skills traditionally have been referred to as internal assets, those personal characteristics that are important in positive youth development, allowing youth to avoid risky behaviors and thrive. They are malleable and the ecological spheres of influence can help individuals develop and strengthen these skills, further promoting positive healthy and successful development.

Definition:

Commitment to Learning: Commitment to Learning is a developmental skill that is important to school success and positive youth development. It provides information about the extent to which students care about doing well in school, pay attention in class, go to class prepared, are interested in learning, and find learning useful. Students who are committed to learning agree that being a student is an important part of who they are.

Positive Identity (PI) (may be more meaningfully titled: Positive Outlook): having a sense of control of one's life, feeling good about oneself and the future, dealing well with disappointment and life's challenges, and thinking about one's purpose in life. PI is a developmental skill and an important part of positive youth development. It provides information about the extent to which youth report a sense of control of their life, feel good about themselves and their future, deal well with disappointment and life's challenges, and think about their purpose in life. It may be more meaningfully interpreted as a measure of positive outlook and hope. PI can also be referred to as resiliency.

Social Competence: Social Competence (SC) is characterized by saying "no" to dangerous/unhealthy choices, building friendships, expressing feelings appropriately, planning ahead and making good choices, resisting bad influences, resolving conflicts without violence, accepting differences in others, and recognizing the needs and feelings of others. SC is a developmental skill and an important part of school success and positive youth development. It provides information about the extent to which youth say no to dangerous/unhealthy things, build friendships, express feelings appropriately, plan ahead, make good choices, resist bad influences, resolve conflicts without violence, accept differences in others, and recognize the needs and feelings of others.

Data Source and Availability for Metric:

Data for this metric comes from the Minnesota Student Survey (MSS). The Minnesota Student Survey is the primary source of comprehensive data on youth at the state, county and local levels in Minnesota and is the only consistent source of statewide data on the health and well-being of youth from smaller population groups, such as racial or ethnic subgroups. It is an anonymous, statewide school-based survey conducted to gain insights into the world of students and their experiences. Social-emotional learning is one of many domains examined in

the MSS. Since 2013, the MSS has been administered every three years to students in grades 5, 8, 9, and 11. All public school districts are invited to participate. The study design is correlational, thus no causal arguments can be made from the data.

What is this metric intended to measure?

This metric measures 4 areas (Developmental Skills, Commitment to Learning, Positive Identity, Social Competence).

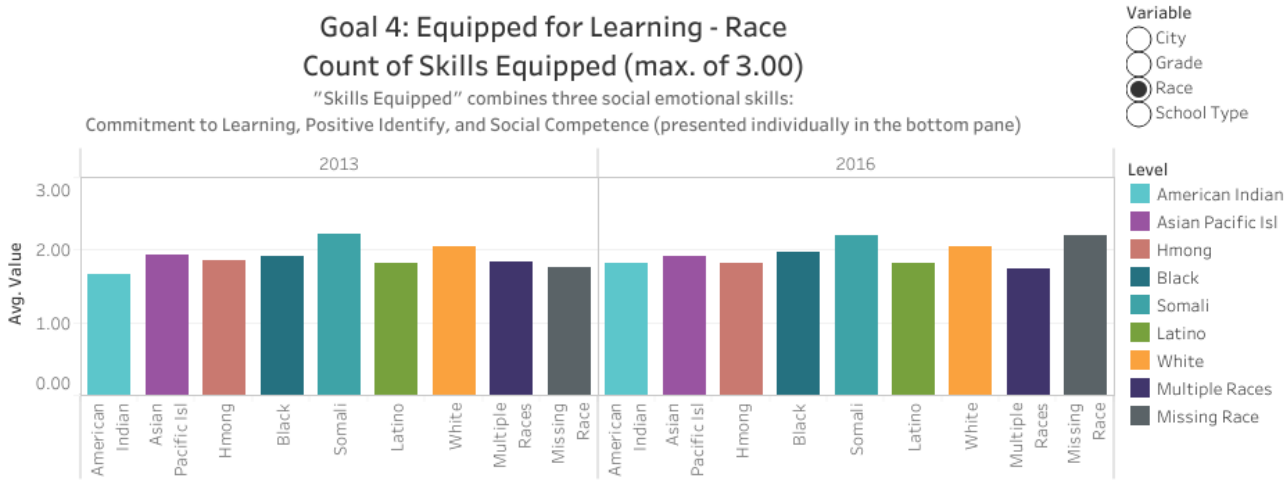
Who has influence over the outcomes of this metric?

This metric is influenced by communities, teachers, schools, districts, parents, families and peers. Metrics may also be influenced by school climate initiatives in districts, programs aimed at promoting youth mental health and well-being or other community-based collaborations that seek to support youth and their positive development and resiliency.

Disaggregation

When disaggregated, we see differences by race in the skills measured as shown in Figures C5-C8.

Figure C5. Count of Skills Equipped (Commitment to Learning, Positive Identity & Outlook, Social Competence) by Race – Minneapolis and St. Paul only

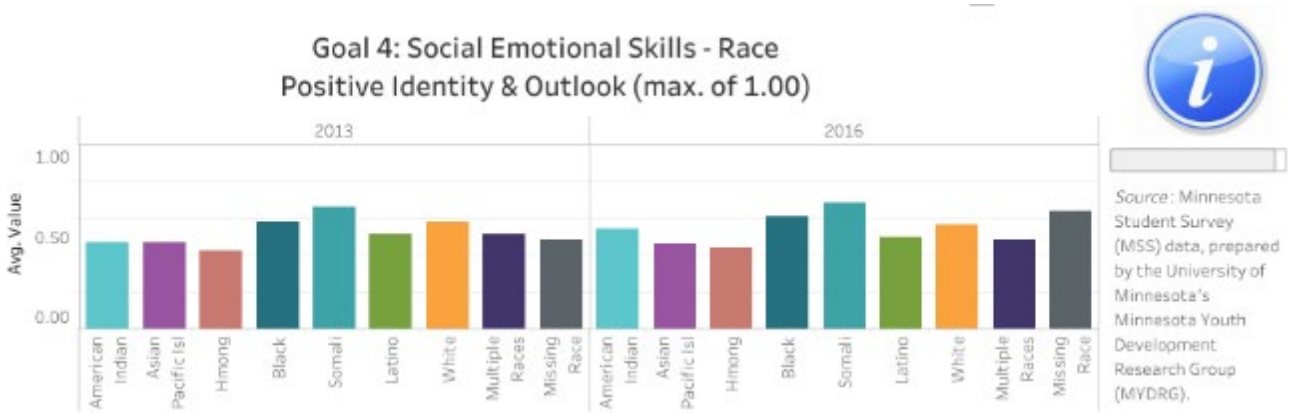


Source: Generation Next; Original source: Minnesota Student Survey (MSS) data, prepared by the University of Minnesota's Minnesota Youth Development Research Group (MYDRG)

Figure C6. Commitment to Learning Results by Race – Minneapolis and St. Paul only

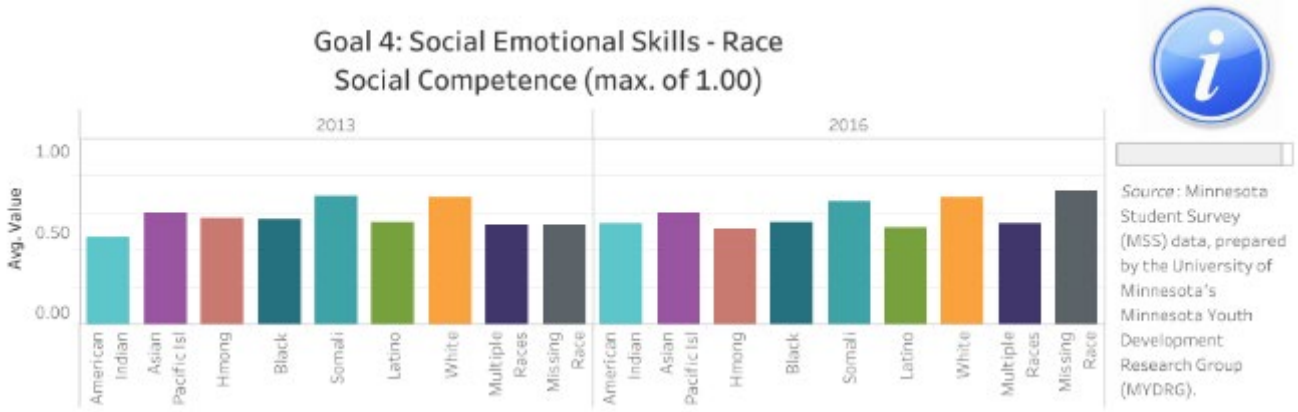
Source: Generation Next; Original source: Minnesota Student Survey (MSS) data, prepared by the University of Minnesota's Minnesota Youth Development Research Group (MYDRG)

Figure C7. Positive Identity & Outlook Results by Race – Minneapolis and St. Paul only



Source: Generation Next; Original source: Minnesota Student Survey (MSS) data, prepared by the University of Minnesota's Minnesota Youth Development Research Group (MYDRG)

Figure C8. Social Competence Results by Race – Minneapolis and St. Paul only



Source: Generation Next; Original source: Minnesota Student Survey (MSS) data, prepared by the University of Minnesota's Minnesota Youth Development Research Group (MYDRG)

Notes: Social-Emotional Skills measures use Minnesota Student Survey (MSS) data, prepared by the University of Minnesota's Minnesota Youth Development Research Group (MYDRG), directed by Dr. Michael Rodriguez, Department of Educational Psychology, University of Minnesota. The skills are part of the Developmental Asset Profile, used with permission from the Search Institute. Filters by Race use student-identified categories that are different from other data sources. In the MSS, students are asked to identify with as many ethnic and racial groups as appropriate. In order to create a race/ethnic variable that allowed for reporting students in one group and avoid duplicating students in multiple groups, MYDRG used the following process:

1. Students who identified as Hmong, Somali, or Latino (an ethnicity) are classified in these community groups in that priority order, regardless of any racial identification. If a student identified who identified as Hmong also identified as Somali, they are classified as Somali; if a Somali student also identified as Latino, they are classified as Latino.
2. American Indian students who did not identify with an ethnic community are classified as American Indian regardless of whether they also identified with other racial groups.
3. Native Hawaiian/Pacific Islander students are combined with Asian students.
4. Of the students who did not identify with an ethnic group, those who identified with multiple racial groups are classified as multiracial.
5. The remaining racial groups are students who identified only with that racial group, including Asian/Pacific Islander, Black, and White. In summary, students who identified with an ethnic group are classified in their ethnic group. American Indian students are those without an ethnic classification, and include those with multiracial identifications. Asian/Pacific Islander students do not include Hmong students. Black students do not include Somali students. White students are White only.

Context for Metric and Usage:

This metric relies on an understanding that the survey is anonymous and reporting at low levels of geography are generally prohibited to protect student privacy. As a survey, the information is self-reported.

Limitations and Caveats:

Not all students complete the MSS. In 2019 170,000 students completed the survey – this included 66% of fifth grade students, 68% of eighth grade students and 54% of 11th grade students. MSS data can provide contextual information at the school or district levels.

The MSS is unique to Minnesota and it may not be possible to directly compare trends to other states. There are also sometimes changes to survey questions which can inhibit Minnesota's ability to compare question results from one year to the next.

Starting strategies

Strategies could include community-building supports in districts and schools, mentoring programs, on-site mental health and physical health programming, access to school counselors and social workers. Parent and peer engagement initiatives that reinforce the importance of educational engagement and well-being will also be instrumental in ensuring youth continue to value their educational futures and community resources that help families deal with violence, substance use, incarceration and other challenges.

Resources:

MN Youth Development Research Group

2013-16 MN Student Survey Statewide Summary Report (Developmental Skills, Supports, & Challenges)

2013-16 MSS Technical Report (Variable Construction Methods & Psychometrics)

Minnesota Department of Education, Early Reading Proficiency (Reading Well by Third Grade) https://education.mn.gov/MDE/dse/prof/

Generation Next https://gennextmsp.org/

METRIC 7: High school completion

We chose this metric because high school graduation is essential for a variety of long-term adult outcomes including entering the workforce as well as the ability to enter post-secondary education.

All schools that serve 12th grade students monitor a four-, five-, six- and seven-year graduation rate, including traditional high schools and alternative high schools. Schools must have at least 10 students in the graduating cohort to receive a graduation rate and have it displayed publicly on state reports.

Every three years beginning in 2018, Minnesota began identifying schools for comprehensive and targeted support through the North Star Accountability System. Schools are prioritized for comprehensive support if the three year average of their four-year graduation rate is below 67% overall or for any student group with 20 or more students. For more information about these designations, see the School and District Accountability page of the MDE website.

MDE recommends that the group consider including other graduation time-spans beyond four years. In particular, starting in 2012, Minnesota began using the federally-required "adjusted cohort graduation rate" model. This model follows students in a group, or a "cohort," throughout high school and determines if they graduate within four, five, six or seven years.

Definition:

> The four-year (five-year, six-year, seven-year) graduation rate shows the number of students graduating from high school within four (five, six, seven) years after entering grade nine. To determine this rate, we identify all students who entered ninth grade. The next step is to add in any students who moved into the school and subtract out any students who moved away. This adjusted number represents the total number of students who are eligible to graduate. The actual graduation rate is determined by dividing the total number of students who actually graduated by the number of those eligible to graduate.
>
> Alternatively, the cumulative percent of ninth graders who complete high school, regardless of time frame, could be measured. However, the timeliness of completion is correlated with probability of high school graduation and college enrollment and completion.

Data Source and Availability for Metric:

> Data for this metric comes from the Minnesota Department of Education.

What is this metric intended to measure?

> This metric measures high school completion, and timely (within four years) high school completion.

Who has influence over the outcomes of this metric?

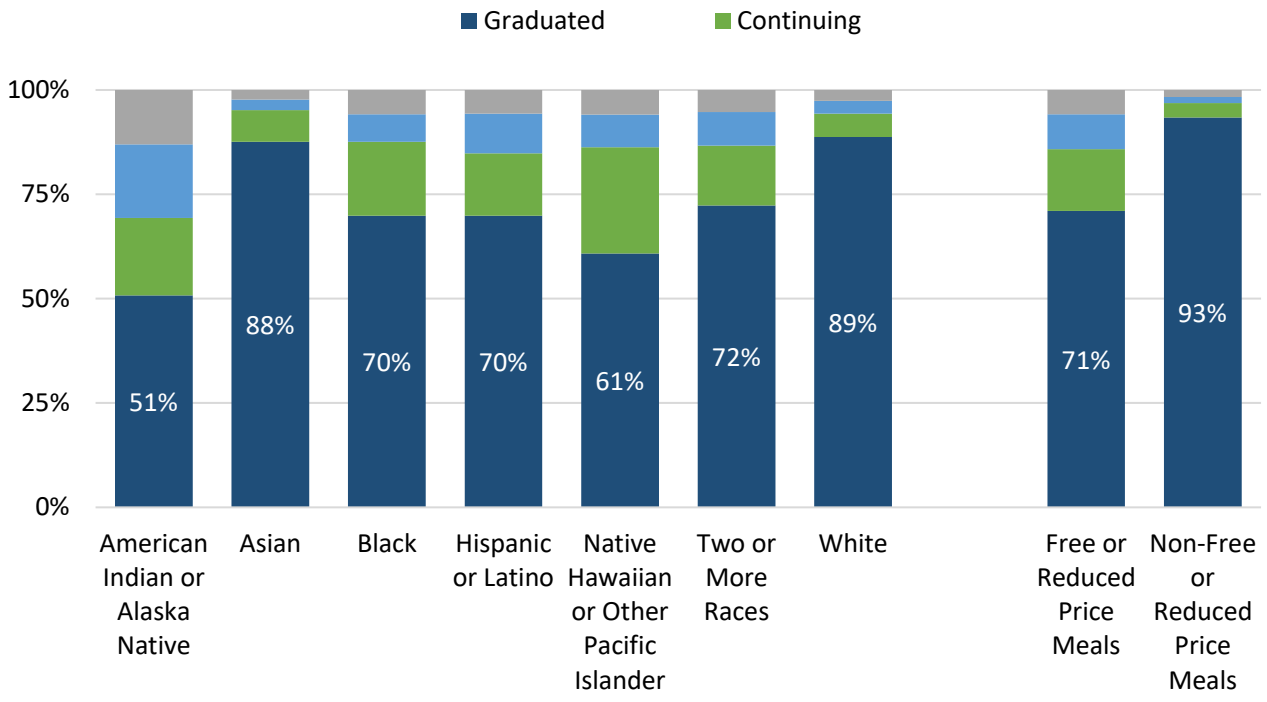
> This metric is influenced by families, districts, schools, teachers and communities making high school completion a priority and supporting high school students. It is also influenced by district

and school initiatives aimed at strengthening school engagement and retaining students through graduation. Some of these initiatives may be community-based, while others are sponsored by districts.

Disaggregation

When disaggregated, we see gaps by race/ethnicity as shown in Figure C9.

Figure C9. 4-Year Graduation Rate, Students in the class of 2019 graduating in 2019 or earlier



Source: Minnesota Department of Education, Minnesota Report Card, 2020.

Context for Metric and Usage:

This metric relies on an understanding of the different timeframes that should be taken into account for high school graduation. Part of this understanding should include that some students successfully complete high school but need additional time to do so.

Limitations and Caveats:

This metric should be seen as a reflection of high school completion and that periods of time beyond four years is appropriate for some students.

Starting strategies

Strategies could include supports to increase and maintain educational engagement so that students who are likely to drop out, persist. This can include specific initiatives as well as cultivating

relationships with caring staff that are so essential to students staying engaged. Others might include mentoring and academic supports that help students achieve completion milestones.

Options for reducing the state's dropout rate and its impact the state's educational attainment rate - include research-based strategies such as academic supports, behavior interventions, career development and job training, family engagement, health and wellness, and mentoring (Chappell, O'Connor, Withington, & Stegelin, 2015, Ecker-Lyster & Niileksela, 2016). Continual and deliberate commitment to time and resources in these strategies will decrease dropouts and increase high school graduation rates, which translate into more students who are ready to seek out postsecondary pathways (Ecker-Lyster & Niileksela, 2016).

Resources:

National Dropout Prevention Center

Minnesota Department of Education, Dropout Prevention/At-Risk Students

METRIC 7b: GED completion

We chose this metric because for adults aged 18 and older who lack a high school diploma, an equivalency degree, such as the GED or the future Adult Diploma, is essential for postsecondary education entry and a prerequisite for many professional certifications and training programs. Understanding who is completing a GED in Minnesota is critical to understanding the non-traditional pathways that adults may take.

Definition

Number of Minnesota adults who pass the GED

Data Source and Availability for Metric

Data for this metric comes from the Minnesota Department of Education and the GED Testing Service.

What is this metric intended to measure?

This metric measures the count of GED recipients in Minnesota.

Who has influence over the outcomes of this metric?

This metric is influenced by adults, adult basic education programs, testing processes, and test content.

Disaggregation

Disaggregated data for GED passers could not be located. However, this data is available within the SLEDS system upon request.

Context for Metric and Usage

This metric relies on an understanding that studies have concluded that GED attainment alone does not significantly increase the wage-earning potential of the GED holder above that of a high school dropout. GED attainment must be connected to occupational training to achieve meaningful success (Tyler, 2003).

The number of individuals taking the GED exam has dropped dramatically in the most recent five years.

Among students who passed the GED who enrolled in postsecondary institutions, a majority (66.6 %) maintained enrollment for two or more semesters. However, only 11.8 % of GED passers who enrolled graduated from a postsecondary program by the end of the 6th year after enrollment (Zhang, 2010).

Limitations and Caveats

The total of students who passed the GED provides limited information. Instead, the number must be placed within the context of how many of those students who passed the GED were Minnesota high school dropouts or adults moving to Minnesota after high school. In addition, examination of the postsecondary and workforce outcomes of students who passed the GED will likely show significant gaps in college enrollment and completion as compared to their high school graduate peers.

Starting strategies

The state could focus on quality adult basic education (ABE) programming since ABE serves as the underlying program for many students who later take the GED. Research indicates that ABE programs that provide assistance in bridging the gap between GED prep and college readiness and occupational training are more successful. Furthermore, students who pass the GED are impacted by the same social, cultural, financial and academic barriers that adult learners face.

Resources:

Tyler, J. H. (2003). Economic benefits of the GED: Lessons from recent research. *Review of Educational Research, 73*(3), 369-403.

Zhang, J. (2010). From GED credential to college: Patterns of participation in postsecondary education programs. Washington, DC: American Council on Education, GED Testing Service. *https://files.eric.ed.gov/fulltext/ED509888.pdf*

METRIC 8: Teacher diversity

We chose this metric because children of all races and ethnicities and backgrounds perform better when they are exposed to teachers of different backgrounds.

> *For students of color, exposure to a teacher of color can change the way they experience education. Teachers of color can serve as strong role models and raise expectations for learning through relationships with students and their families. Several research studies have shown that assignment to same-race teachers for students of color can lead to higher academic achievement, better attendance, a reduction in suspensions and expulsions, a significantly reduced risk of dropping out of high school, and more favorable teacher perceptions. For persistently low-income students, exposure to at least one African American teacher in grades 3–5 increases students' self-reported intention to pursue a bachelor's degree. Taken together, this means students of color who have a teacher of color stay in school longer, learn more, and are more likely to view higher educational attainment as feasible. (*Tennessee Department of Education, 2018, page 1)

Teachers of color can help white students break down negative stereotypes about people of color, and a diverse teacher workforce may help prepare students to participate in a multiracial society.

> *Diverse teachers expose students to different perspectives and experiences, pushing them to be more flexible in their thinking and open to considering the views of others. Preparing students to interact with a diverse society is increasingly important as our country becomes more diverse. A study of young people ages 10–19 shows that implicit racial bias is still as much of an issue for students today as it was in previous generations. Contact with diverse teachers can help break down racial barriers and dispel stereotypes that contribute to implicit bias. (*Tennessee Department of Education, 2018, page 1)

Definition:

> This metric is defined as the Diversity Gap and compares the demographic proportions of teachers and/or staff with the demographic proportions of students in the corresponding schools or classrooms.
>
> Alternative measures include:
>
> - Calculating the difference between the share of minorities among the adult population (people age 21-65) and the share of minorities among full-time public teachers.
> - Create a student-teacher parity index calculated as of the share of minority students in relation to the share of minority teachers. Such an index helps to reveal opportunities for potential exposure of students and teachers, regardless of the size of the minority population in a region. Districts can be grouped into four categories: "parity" means the student-teacher parity index is less than 1.5; "small ratio" represents an index value of

1.5 to 2.5; “moderate ratio” represents a value of 2.5 to 4; and “large ratio” represents index values greater than 4.

Data Source and Availability for Metric:

Data for this metric comes from the Minnesota Department of Education, and the Professional Standards and Licensing Board (PELSB).

What is this metric intended to measure?

This metric measures if demographics of teachers mirror demographics of students.

Who has influence over the outcomes of this metric?

This metric is influenced by teacher preparation programs (recruitment, engagement, and retention of teacher candidates), districts, schools and the state (recruitment, engagement, and retention of new teachers). It is also influenced by the experiences youth have in schools that affect their attitudes toward school and teachers, as well as their career choices.

Disaggregation

Figure C10 displays a profile of Minnesota teachers.

Figure C11 shows the proportion of teachers of color in each of the 11 Economic Development Regions (EDR) in Minnesota. The Twin Cities EDR has the highest percentage of teachers of color in the state. In comparison, the proportion of students of color in each of the EDRs are much larger than the proportion of teachers.

Figure C12 displays the number and percent of licensed staff and students in each of the federally defined race/ethnicity groups. In Figure C12, all licensed educators are included in the staff percentage. Again the proportion of students of color exceeds the proportion of staff of color statewide.

Figure C10. Teacher Profile 2017-2018 from the Teacher Supply Demand Report, PELSB, January 2019

2. Minnesota teacher profile in 2017-18 (N=63,436)[a]

Employment status	N	Percent
Returning staff	57,706	91%
Returning after break	2,523	4%
Transfer from non-Minnesota or non-public schools	775	1.2%
Newly licensed – Minnesota graduates	2,136	3.4%
Newly licensed – graduates from outside of Minnesota	256	0.4%
Total	63,396	100%
Gender		
Female	48,053	75.8%
Male	15,383	24.2%
Total	63,436	100%
Race		
American Indian	285	0.4%
Asian	951	1.5%
Hispanic	634	1%
Black	875	1.4%
White	60,691	95.7%
Total	63,436	100%

Source. Minnesota Staff Automated Reporting System –STAR

[a] The teacher demographic data came from Employment data set, which has a different total number of teachers than in License data set.

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[2] The number of teachers in Minnesota has increased every year since 2011. A total of 60,090 teachers in 2015-16 was reported in the 2017 Report of Teacher Supply and Demand (Minnesota Department of Education, n.d.). However, the exact changes in number of active standard-licensed teachers from 2015-16 to 2017-18 could not be determined because the calculation for this report might be different from the previous report. The proportion of teachers of color remained the same (4.2 percent in 2015-16).

Source: Minnesota Professional Educator Licensing and Standards, 2019 Biennial Minnesota Teacher Supply and Demand Report

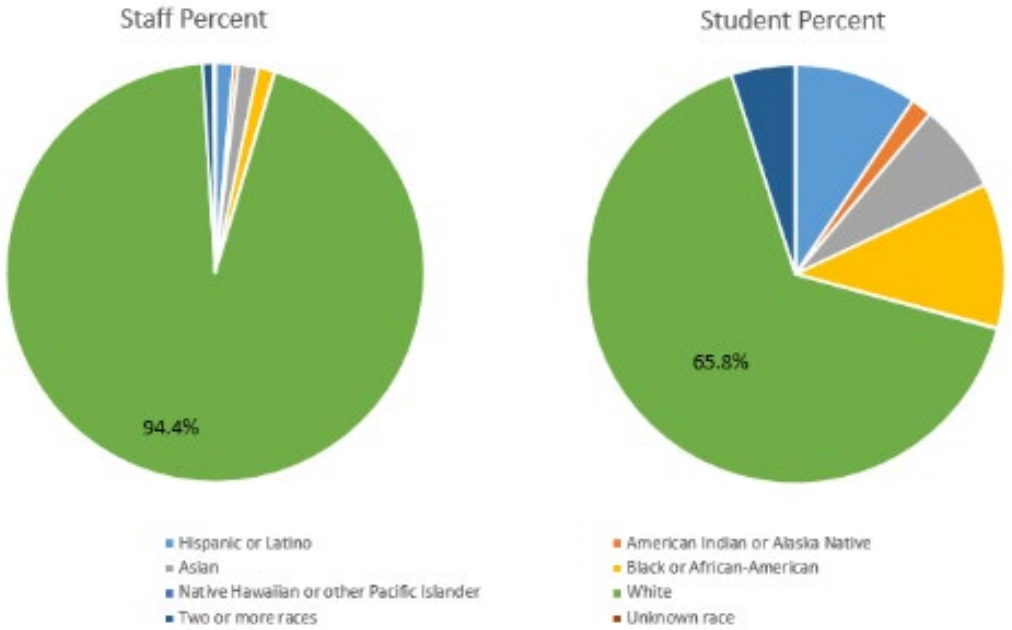
Figure C11. Proportion of teachers of color and students of color by Economic Development Region (EDR)

Economic Development Region (EDR)		Percentage of teachers of color	Number of teachers	Percentage of students of color	Number of students
EDR 1	Northwest	0.4%	1,115	16.8%	14,082
EDR 2	Headwaters	3.6%	1,113	39.6%	14,333
EDR 3	Arrowhead	2.1%	3,237	16.7%	44,510
EDR 4	West Central	1.1%	2,613	15.9%	34,711
EDR 5	North Central	1%	1,992	14.1%	26,069
EDR 6E	Southwest Central	0.4%	1,192	26.2%	16,424
EDR 6W	Upper Minnesota Valley	0.7%	608	18.3%	7,574
EDR 7E	East Central	0.5%	1,816	10.5%	25,886
EDR 7W	Central	1.2%	5,410	17.0%	79,961
EDR 8	Southwest	0.9%	1,742	30.1%	20,632
EDR 9	South Central	0.7%	2,670	20.9%	34,790
EDR 10	Southeast	1.3%	5,890	25.5%	78,728
EDR 11	7-County Twin Cities	7%	34,062	44.4%	487,152
	Minnesota	4.3%	63,436	33.5%	884,852

Source. Minnesota Staff Automated Reporting System -STAR.

Source: Minnesota Professional Educator Licensing and Standards, the 2019 Biennial Minnesota Teacher Supply and Demand Report

Figure C12 Race/Ethnicity of Licensed Staff and Students



Source: Minnesota Department of Education, Minnesota Report Card

Context for Metric and Usage:

This metric relies on an understanding of processes and practices to recruit, prepare and retain teachers, the climate of schools, and the supports in place to retain teachers of color.

Limitations and Caveats:

The adult population is not as diverse as the child (student-age) population. Therefore, even if a proportionate share of persons of color went into teaching as a profession, considerable time would be needed to reach student-teacher parity and assuming that recruitment and retention of teachers of color were effective and proportionate. Statewide numbers do not reflect distribution in schools across the state.

Starting strategies

Strategies could include recruitment/retention strategies, as well as attention to district/school policies and practices related to teacher assignment. In addition, the following strategies are proposed within current research:

- Data
    - Establish a diversity target for teachers in each public use microdata area (PUMAs) which are U.S. Census-designated areas corresponding to regions of states containing at least 100,000 people. This measure would help improve diversity of the teaching workforce across all districts, not just districts with a disproportionate share of students of color.
- Funding
    - Provide financial incentives for students of color to pursue teaching.
    - Improve compensation packages to attract the brightest, most resilient people of color into the teaching profession.
- Preparation
    - Expand the number of high-quality, supervised, clinical-field experiences and paid residencies for novice teachers in districts and schools with large numbers of poor students and students of color.
    - Improve tracking of graduates from teacher preparation programs to understand weaknesses and barriers to retention and promotion within the field.
    - Create targeted, teacher recruitment programs that seek to attract high-achieving minority students to the teaching field and expand “grow-your-own” programs.
    - Start cultivating student interest in the field in high school, or earlier.
- School Culture, Support
    - Provide ongoing mentoring and support for candidates of color and placed teachers.

- Advance cultural competency for all teachers and staff: color blindness and racial micro aggressions take a toll on the professional growth and retention of teachers of color, suggesting a need for institutional reform.
- Improve school teaching conditions through improved school leadership and organizational conditions.

Resources

Minnesota Professional Educator Licensing and Standards, the 2019 Biennial Minnesota Teacher Supply and Demand Report http://mn.gov/pelsb/board/news/index.jsp?id=1113-377241

REL Midwest, July 2018, *Ask A REL Response, Teacher Workforce- What does the research say about effective practices for recruiting and retaining teachers of color?* https://ies.ed.gov/ncee/edlabs/regions/midwest/askarel/2018/recruiting-retaining-teachers-of-color.aspx

U.S. Department of Education, 2016, The State of Racial Diversity in the Educator Workforce https://www2.ed.gov/rschstat/eval/highered/racial-diversity/state-racial-diversity-workforce.pdf

The Brookings Institute, 4 ways to measure diversity among public school teachers, https://www.brookings.edu/blog/brown-center-chalkboard/2017/11/17/four-ways-to-measure-diversity-among-public-school-teachers/

Tennessee Department of Education, 2018, Teacher and Administrator Racial and Ethnic Diversity in Tennessee https://www.tn.gov/content/dam/tn/education/reports/rpt_teacher_admin_diversity.pdf

METRIC 9: Dual credit access & participation

We chose this metric because participating in dual credit courses increases the likelihood of college enrollment and completion and provides high school students with engaging academic experiences. Dual credit courses also expose students to the college experience and increase their college knowledge. Prior studies found that Minnesota high school graduates who participated in acceleration programs had higher rates of college enrollment, readiness, and persistence than did those who did not participate (Davis et al., 2017).

Definition:

This metric is defined as the percent of high school graduates (or enrolled students) participating in one or more dual credit programs.

Alternative measure: This is an area where leveraging both the data on rigorous course-taking and data on career and technical education is logical and reasonable. Both provide exposure to education and training in support of career pathways. Career and technical education (CTE) is an opportunity for advancing students' college and career readiness, yet some students experience barriers to CTE access, participation, and completion. CTE assists secondary and postsecondary education students in meeting challenging academic and technical standards, focuses on high-skill, high wage, or in-demand occupations, and increases employment opportunities for populations chronically unemployed or underemployed. Ensuring equitable access to and completion of CTE programs is aligned with the state's attainment goal.

Data Source and Availability for Metric:

Data for this metric comes from program data at the Minnesota Department of Education, including Advanced Placement (courses and exams), International Baccalaureate (courses and exams), PSEO (courses and grades), and Concurrent Enrollment (courses and grades).

What is this metric intended to measure?

This metric measures student access to and participation in courses allowing for college credit to be earned while in high school.

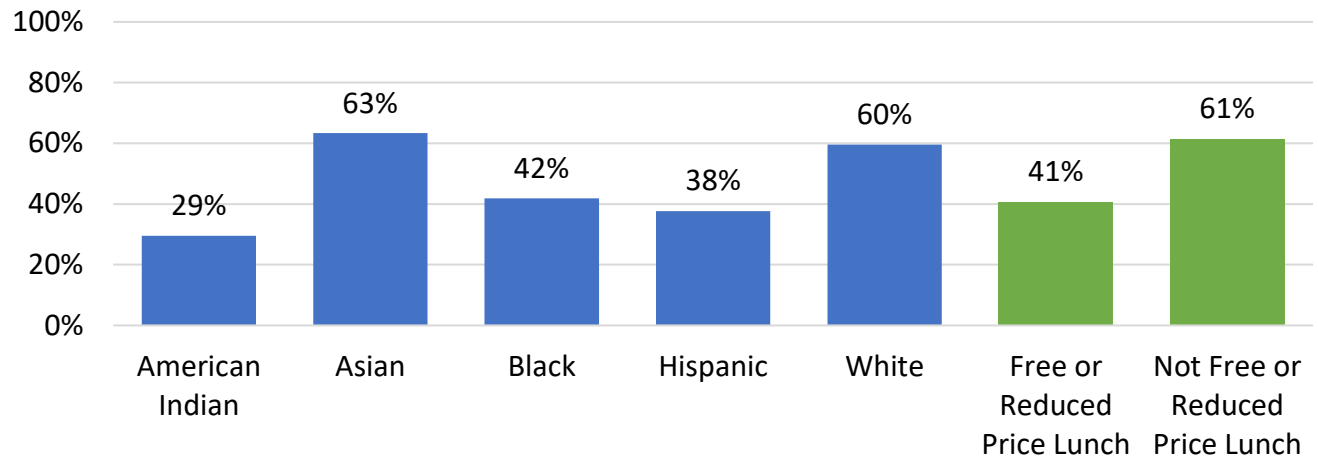
Who has influence over the outcomes of this metric?

This metric is influenced by the academic readiness of the student, the college-going culture of the high school, staff (counselors, teachers, and administrators), parents, and partnering colleges. This metric is also influenced by state funding for dual credit courses, admissions requirements for the courses, teaching qualifications, and other state and system level policies.

Disaggregation

When disaggregated, American Indian, Black, Hispanic, and students eligible for free or reduced price meals enroll in dual credit courses at rates substantially lower than their peers.

Figure C13. Rigorous Course-Taking Enrollment Rates for Minnesota Public High School Graduates, Class of 2019



Source: SLEDS

Context for Metric and Usage:

This metric relies on an understanding of the laws and regulations governing access to and offering of dual credit courses.

Limitations and Caveats:

This metric does not measure the extent to which students participating in dual credit courses eventually receive college credit for that participation.

Starting strategies

- Implement and foster a solid college-going culture. An inclusive college-going culture supports all forms of postsecondary educational options and encourages students to select the appropriate avenue to achieve their goals after high school. Additionally, supportive environments create avenues for students to rise to the challenge, and provide a space for students to take risks and safely fail.
- Create an intentional dual enrollment program that includes a clear vision reflecting the school's goal for dual enrollment. In alignment with the high school's vision, the school must identify pathways for students to access college level courses, determine eligibility for enrollment, and design interventions to encourage student enrollment. The program should include opportunities for students to gain access to college level material, prepare students for college expectations and increase confidence to succeed in college. Lastly, the courses and the postsecondary partner selected for dual enrollment should meet students' postsecondary needs and desires. The dual enrollment assessment should include a detailed review of how students access college level material, information, and guidance.

Resources:

Trost, J. (2016). Uneven access: Dual enrollment programs and students of color in Minnesota. Retrieved from *https://conservancy.umn.edu/handle/11299/181679*

Davis, E., Smither, C., Zhu, B., & Stephan, J. (2017). Characteristics and Postsecondary Pathways of Students Who Participate in Acceleration Programs in Minnesota. REL 2017-234. Regional Educational Laboratory Midwest. https://eric.ed.gov/?id=ED573046

Advanced Placement

Concurrent Enrollment

International Baccalaureate

Postsecondary Enrollment Options (PSEO)

METRIC 10: College & career planning

We chose this metric because Minnesota is one of many states that require high school students to develop education and career plans, also known as personalized learning plans. Minnesota Statutes, section 120B.125 requires all students beginning no later than ninth grade to have a Personal Learning Plan established around several key elements. This plan can be considered a life plan that includes academic scheduling, career exploration, career and employment-related skills, community partnerships, college access, all forms of postsecondary training, and experiential learning opportunities.

The Personal Learning Plan is intended to encourage students to think more intentionally about their future coursework, career aspirations, and preparation for postsecondary education. However, we lack data indicating the activities in which students are students engaged to accomplish plan milestones, how these practices are implemented in schools, and how participating in specific education and career planning practices relate to students' completion of key milestones on the road to college and career.

Preparing students for education and training beyond high school extends beyond imparting and scaffolding essential information. Enrichment and preparation initiatives are necessary to provide students with knowledge of:

- post-high school education and training options as they align to their college and career goals,
- resources needed to finance their education and training,
- understanding of the application processes, and
- available support and services to facilitate their transition.

To help students explore college and career options and develop aspirations, a school or college may provide postsecondary-related experiences, college and career fairs, college visits, job shadowing, workplace tours, mock interviews, and internships. These activities expose learners to professional environments, college varieties, and the processes required to transition into these pathways.

The Minnesota Career and College Readiness competencies have four domains: Employability Skills, Mindsets and Social Awareness, Career Development, and Transitional Knowledge. These competencies, identify mindsets, skills, abilities and experiences that all students need to enter the workforce or an array of postsecondary options.

Conley (year) also advances the Four Keys to College and Career Readiness. The four keys to college- and career-readiness model is derived from Standards for Success, additional empirical analysis of the content of entry-level college courses at a wide range of institution types, and 38 high schools that did a better than expected job of getting a wide range of students ready to succeed in college. The model has 42 components grouped into four “keys.”

Definition:

This metric is defined as participation in or completion of key activities students engage into prepare for college and career.

- Career planning activities
  - Exploration of career interest and opportunities
  - Work-based learning experiences
- College readiness activities
  - Exploration of college options
  - Contextual awareness and process-oriented knowledge (how to choose among colleges, how to apply to college and for financial aid, and more sophisticated insights into how college is different from high school)

Evaluations of Minnesota college access and success programs can highlight the activities undertaken and their relative effectiveness to provide a basis for developing this metric.

The state of Arizona and REL West are examining the landscape of implementation and exploring the possible links between planning and student outcomes—such as the relationship between developing a plan in 9th grade and the likelihood of filling out the FAFSA. The initial evidence generated from the study will help stakeholders understand what practices tend to take place in schools and determine whether some merit a closer look as pieces of a formal state policy. This study serves as a model for Minnesota to consider for implementation in creating metrics related to college and career planning.

Data Source and Availability for Metric:

Data is not available for this metric.

What is this metric intended to measure?

This metric measures the activity of students as they engage in college and career planning to better understand how those activities correlate to post-high school outcomes and where additional supports or investments should be considered.

Who has influence over the outcomes of this metric?

This metric is influenced by students, families, peers, teachers, counselors, caring adults, college and career preparation programs, and educational organizations. As noted above, the degree to which the school culture is supportive of college-going is also highly relevant.

Disaggregation

No data currently exists for this metric.

Context for Metric and Usage:

This metric relies on an understanding of how students engage in college and career planning, and the decision-making processes of students during high school. The skills developed by individual learners may overlap with METRIC 6: Social-emotional learning.

Limitations and Caveats:

If data are available, it will likely take some time before Minnesota is able to have a full understanding of how robustly schools develop Personal Learning Plans with students to initiate planning and the degree to which districts work with students to implement meaningful milestones in those plans with fidelity.

Starting strategies

Strategies could include providing direct instruction and support for middle and high school students engaging in all aspects of college and career planning.

Resources

College and Career Readiness and Success Center at American Institutes for Research, *The College and Career Readiness and Success Organizer*, https://ccrscenter.org/ccrs-landscape/ccrs-organizer

Arizona Partnership for Education and Career Success, Education and Career Planning in High School: A Longitudinal Study of School and Student Characteristics and College-Going Behaviors https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=4659

Minnesota Department of Education, CCR Resource Guide: Domains and Competencies https://education.mn.gov/mdeprod/idcplg?IdcService=GET_FILE&dDocName=MDE075306&RevisionSelectionMethod=latestReleased&Rendition=primary

Conley, D. T. (2017). The new complexity of readiness for college and careers. Preparing students for college and careers: Theory, measurement, and educational practice. New York: Routledge. https://www.researchgate.net/profile/Matthew_Gaertner/publication/319617645_Preparing_Students_for_College_and_Careers_Theory_Measurement_and_Educational_Practice/links/5d461c33299bf1995b63d8c3/Preparing-Students-for-College-and-Careers-Theory-Measurement-and-Educational-Practice.pdf#page=27

Minnesota Office of Higher Education, 2015, Minnesota College Readiness Program Inventory, https://www.ohe.state.mn.us/pdf/MNCollegeReadinessInventoryReport.pdf

METRIC 11: Summer learning loss

As students return to school in the fall, many of them will be starting the academic year with achievement levels lower than where they were at the beginning of summer break. This phenomenon, referred to as summer learning loss or summer slide, has been of interest to education researchers for more than a century. Summer learning loss is especially concerning for students who are not achieving academic proficiency prior to summer break; however within the context of COVID-19, the loss seems especially troublesome. Does summer learning loss occur for Minnesota students? Which students are impacted the most? How do we ensure access to summer programs to combat learning loss?

We chose this metric because mitigating summer learning loss can improve the likelihood that students achieve early grade reading proficiency and middle grade math proficiency.

Definition:

> This metric does not currently exist at a state level. Using standardized math and reading tests, the measurement is based on comparisons of spring achievement levels and fall achievement levels while tracking participation in summer learning programs or other academic support interventions provided. It is a focus of research for grades K-9.

Data Source and Availability for Metric:

> Data for this metric would be limited to the local level. Research cites the NWEA MAP for 5-9th and Dynamic Indicators of Basic Early Literacy Skills (DIBELS) or STAR literacy programs for K-3 as the most common tests for measurement of summer learning loss. Similar to tests of progression to proficiency, the measurement relies on the same student being tested in spring and fall.

What is this metric intended to measure?

> This metric measures the loss of academic skills over the summer. Meta-analysis concluded there is a lack of consensus on the magnitude of summer learning loss.

Who has influence over the outcomes of this metric?

> This metric is influenced by funding, availability, and access to summer learning programs, in addition to robust instructional supports for reading and math during the school year. This metric is also influenced by resources available to the family in terms of academic supports.

Disaggregation

> Data is not available at the state level.

Context for Metric and Usage:

> This metric relies on an understanding of criterion referenced standardized testing and the ability and limitations of measuring content mastery via standardized tests.

Starting strategies

Strategies could include summer learning programs and academic camps. Many summer programs focus on reading or STEM. Parent engagement is critical as is program quality. Research indicates that middle-income students benefit from these programs more than lower-income students (Cooper et al., 2000) which may be the results of access to programs, quality of programs, or other factors within the family environment. Free programs, such as public library reading programs, benefit low-income students the most (Kim & Quinn, 2013). Financial access is cited as a primary barrier for students due to high costs. Data emphasizes a reading level gap between lower-income and higher-income students widened over summer months (Atteberry & McEachin, 2016).

Resources:

Brookings Institution, https://www.brookings.edu/research/summer-learning-loss-what-is-it-and-what-can-we-do-about-it/

Atteberry, A., & McEachin, A. (2016). School's out: Summer learning loss across grade levels and school contexts in the United States today. In Alexander, K., Pitcock, S., & Boulay, M. (Eds). *Summer learning and summer learning loss,* pp35-54*.* New York: Teachers College Press.

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Quinn, D.M., Cooc, N., McIntyre, J., & Gomez, C.J. (2016). Seasonal dynamics of academic achievement inequality by socioeconomic status and race/ethnicity: Updating and extending past research with new national data. *Educational Researcher, 45*(8), 443-453. http://journals.sagepub.com/doi/abs/10.3102/0013189X16677965?journalCode=edra

METRIC 12: Technology Access

We chose this metric because COVID-19 has created a renewed urgency for closing the digital divide in America's education system. Without access to an Internet connection and/or dedicated learning device at home, the most vulnerable students are at risk of falling significantly behind in or not completing their education. Closing this digital access gap should be a priority. The first step in solving this equity challenge is to identify which students are impacted. Schools, districts, and colleges need to move from estimating the gross percentage of students who do not have adequate home digital access or appropriate digital learning devices to measuring specifically which students do not have access, in order to connect those students to consistent, high-speed Internet and laptops.

The Minnesota Department of Education estimates that at least 25,000 Minnesota students still lack the tech devices and high-speed internet access essential for academic learning, out-of-school activities and critical services such as telehealth.

Definition:

This metric is defined per the guidelines issued in the July 2020 report from the Council of Chief State School Officers (CCSSO *Restart & Recovery: Home Digital Access Data Collection: Blueprint for State Education Leaders*. The following data fields were identified in collaboration with states, schools, districts, and industry experts. By collecting the following information about every student, administrators will be able to identify (1) whether a student has access to Internet connectivity and/or a dedicated device at home and (2) whether that access is sufficient for high-quality online learning. This framework would also be useful in higher education where digital divide issues impact equity as well. Table X displays the survey questions needed to collect the appropriate data for assessing digital access for individual learners. A next and critical step will be to codify these initial data elements into a data standard to ensure an ability to share and analyze comparable data.

Data Source and Availability for Metric:

This would be a new data collection.

What is this metric intended to measure?

This metric measures digital access for students, including identification of common barriers to access and use.

Who has influence over the outcomes of this metric?

This metric is influenced by policymakers and leaders at the local, regional and state level. Access to appropriate learning devices can be provided by schools and colleges with adequate funding. Access to high-speed internet requires community-based solutions or provision of personal hot spots for students.

Table C2. Digital Access Survey

Data Field	Question	Response Options
Digital Device	What device does the student most often use to complete schoolwork at home?	Chromebook Desktop computer Laptop computer Tablet Smartphone Other None
Device Access	Is the primary learning device a personal device or school-provided? Is the primary learning device shared with anyone else in the household?	Personal - Dedicated Personal - Shared School Provided - Dedicated School Provided - Shared None
Internet Access in Residence	Can the student access the internet on their primary learning device at home?	Yes No
Internet Access in Residence	What is the primary type of internet service used at home?	Fiber Cable DSL Microwave Satellite Dial-up Personal hotspot/smartphone School-provided hotspot Unknown Other None
Internet Performance	Can the student stream a video on their primary learning device without interruption?	Yes, with no issues Yes, but not with consistent quality No

Disaggregation

No data currently exists for this metric.

Context for Metric and Usage:

This metric relies on an understanding that expanded broadband access is an existing state initiative. The Minnesota Legislature has established goals in statute to guide the state's broadband development efforts through the year 2026. It is a state goal that (1) no later than 2022, all Minnesota businesses and homes have access to high-speed broadband that provides minimum download speeds of at least 25 megabits per second and minimum upload speeds of at least three megabits per second; and (2) no later than 2026, all Minnesota businesses and

homes have access to at least one provider of broadband with download speeds of at least 100 megabits per second and upload speeds of at least 20 megabits per second.

Limitations and Caveats:

This metric encompasses multiple issues and/or barriers (internet access, device access, digital literacy, e-learning strategies, and family support).

Starting strategies

The Minnesota Department of Education recommends, but does not require, that districts provide hotspots and tablets for students who don't have devices at home during distance learning. A partnership between the state and Minnesota businesses and nonprofits — including Best Buy, Comcast and the St. Paul & Minnesota Foundation — has raised nearly $2 million to bring internet access and computers to students statewide.

Strategies could include the following:

- School-issued devices: Many schools and colleges supply an Internet-connected device for each student.
- School-issued hot-spots: Wireless access providers can lease "hot spots" or portable wireless access points to schools, which allow students to check them out for home use.
- Expanded free Internet access: Public libraries have long provided this service to patrons. YMCAs, YWCAs, and other community centers where kids spend time outside school can be sources of connectivity.
- Expanded subsidized or free internet access for lower-income families: Nonprofit organizations work with telecommunication providers to make Internet connectivity affordable for families who qualify for free- and reduced-price school meal programs.
- City-based internet access programs: The City of Minneapolis has an outdoor wireless network that covers nearly 100% of the city. The wireless network provides a level of convenience and connectedness to the people who live, work and play in Minneapolis.

Resources:

The Saint Paul & Minnesota Foundation, partnership for a Connected MN https://www.spmcf.org/connected-mn#

July 2020. The Council of Chief State School Officers (CCSSO), *Restart & Recovery: Home Digital Access Data Collection: Blueprint for State Education Leaders*. https://ccsso.org/sites/default/files/2020-07/7.22.20_CCSSO%20Home%20Digital%20Access%20Data%20Collection%20Blueprint%20for%20State%20Leaders.pdf

College

METRIC 13: College enrollment

Enrollment in higher education is a critical transition in education. College enrollment is a measure of access and is the first step to attaining a postsecondary certificate or degree. There are three populations for this metric – enrollment of recent high school graduates (13a), enrollment of adult completing adult basic education or passing the GED, and enrollment of adults age 25 and older (13c).

METRIC 13a: College enrollment rate of high school graduates

The share of high school graduates enrolling in college is a standard measure. Due to disparities in high school graduation rates by race/ethnicity, it is important to look at the postsecondary enrollment rates for all Minnesotans in a given age group in order to measure the opportunity gap.

Definition:

> This metric is defined as the share of high school graduates enrolling in college within a given time frame (immediate fall enrollment, enrollment within 16 months of graduation, enrollment within 2 years of graduation, enrollment by age 25 or 8 years after graduation).

Data Source and Availability for Metric:

> Data for this metric comes from SLEDS which links data from the Minnesota Department of Education with data from the Minnesota Office of Higher Education and the National Student Clearinghouse.

What is this metric intended to measure?

> This metric measures the share of Minnesota public high school graduates who enroll in postsecondary education. It also shows which institutions students attended and when students enrolled. This metric will also measure the share of the Minnesota population that has enrolled in postsecondary education, whether they attained a high school degree or not. This will be a broader measure of access.

Who has influence over the outcomes of this metric?

> This metric is influenced by funding for K-12 as it affects both academic preparation and college preparation, knowledge, and counseling. This metric is also influenced by funding for higher education and need-based grant. It is also influenced by K-12 college preparation, knowledge, and college going culture and colleges' outreach, admissions and placement practices.

Disaggregation

> When disaggregated, we see gaps in college enrollment by race, income, gender, and disability as shown in Figure C14. We also see gaps by timing of enrollment and sector of enrollment (not shown).

Figure C14. College Participation Rates for Minnesota Public High School Graduates Enrolled in Minnesota or Out of State in the Immediate Fall after Graduation, Class of 2018

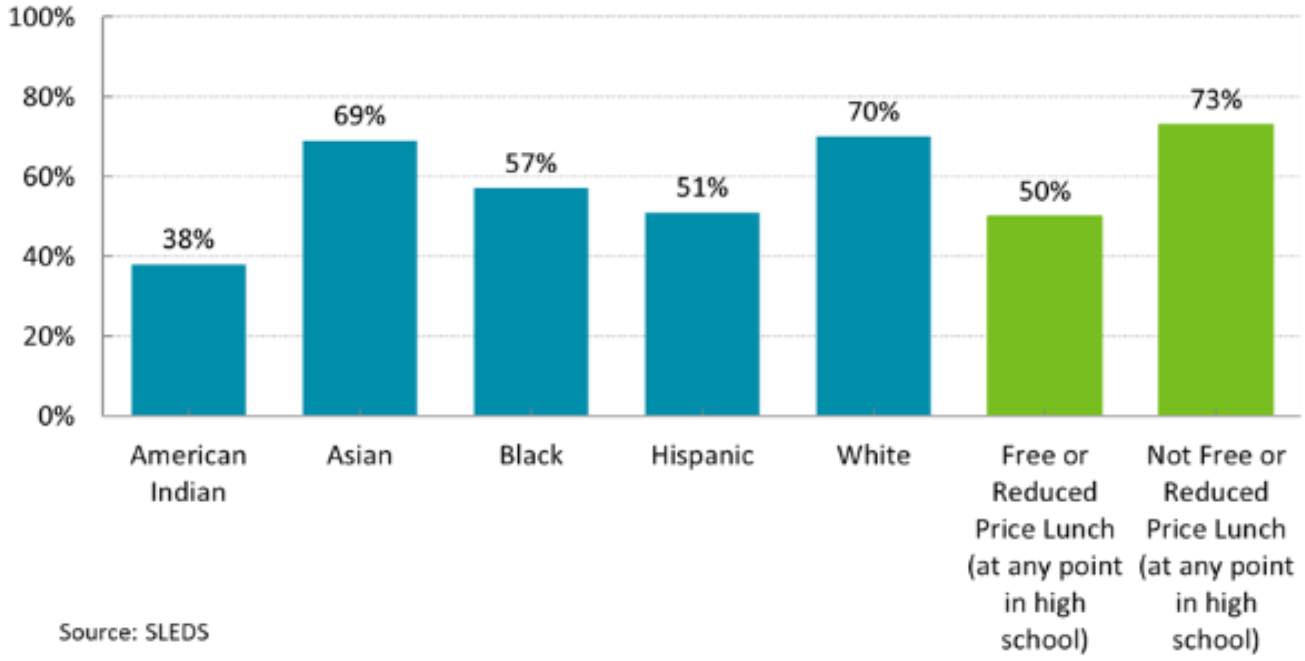
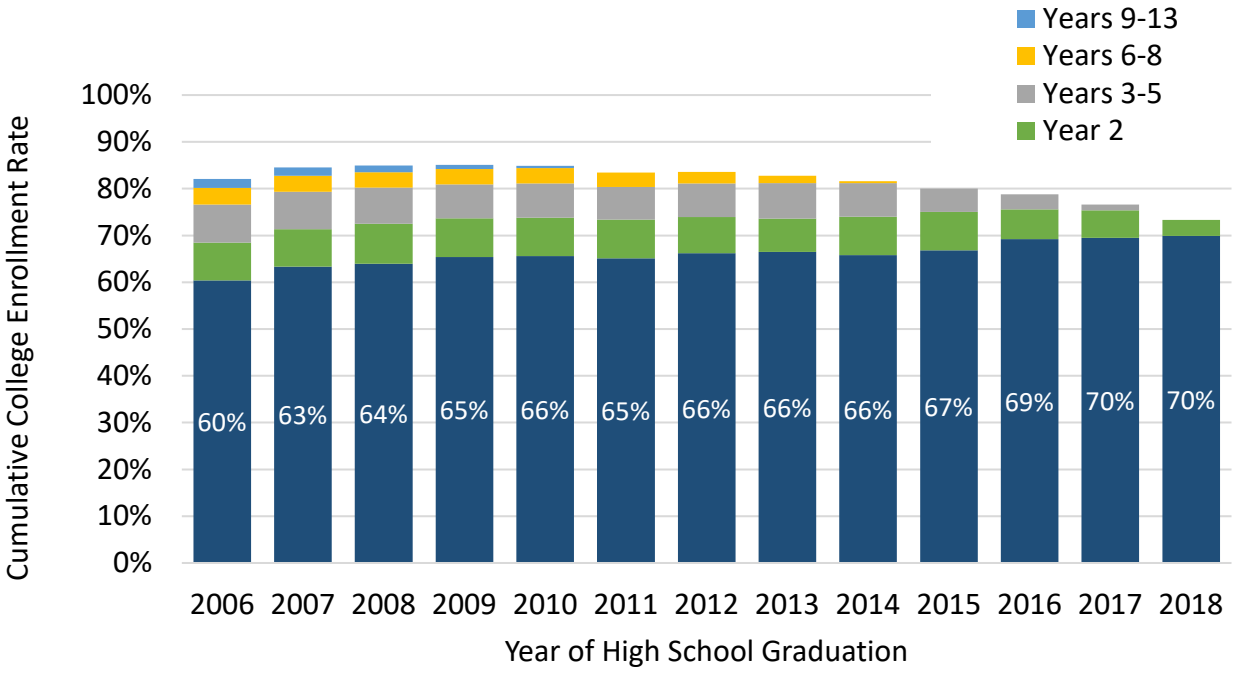


Figure C15. College Participation Rates for Minnesota Public High School Graduates Enrolled in Minnesota or Out of State by Age 25, Class of 2018



Source: SLEDS

Context for Metric and Usage:

This metric relies on an understanding that it is usually based on high school graduates and thus missing all those who did not graduate from high school. It is also important to understand the work and college tradeoff calculation people are making, the impact of social messaging of who "should" attend college and what type of college they should attend, and college costs.

Fall enrollment is important because students who delay enrollment in college are less likely to complete a college certificate or degree (Lin & Liu, 2019). Thus, gaps in immediate postsecondary enrollment directly affect college completion.

Enrollment by age 25 is important because of its alignment with the state's educational attainment goal.

Limitations and Caveats:

This metric does not measure college enrollment of non-traditional populations (HS dropouts, adults age 25+).

Starting strategies

Strategies increasing postsecondary enrollment among recent high school graduates include: mitigating aspiration-attainment gaps, increasing access to dual credit and other rigorous courses in high school for all students, not just high academic achieving students, increasing core content knowledge, increasing college knowledge, ensuring financial preparation and awareness of financial aid, and coaching and mentoring (Carrell & Sacerdote, 2017; Page & Scott-Clayton, 2019).

METRIC 13b: Postsecondary Enrollment of Adults Completing Adult Basic Education or the GED

As with metrics 13a and 13b, we chose this metric because the postsecondary enrollment rate of recent high school graduates presents an incomplete picture.

Definition:

This metric can be defined as

- the percentage of persons previously enrolled in ABE who enroll in college in a later time period, and
- the percentage of persons not previously enrolled in ABE but passing the GED in Minnesota who enroll in college in a later time period.

Data Source and Availability for Metric:

Data for this metric comes from SLEDS which links data from the Minnesota Department of Education, Adult Basic Education and the GED with data from the Minnesota Office of Higher Education.

Learner's age at entry or current age can be computed. Total number of learners by age is reported using the following age categories: 16-18, 19-24, 25-44, 45-59, 60 and older. For students who do not know their date of birth, an arbitrarily selected date that corresponds to their age (or estimated age) should be used. (http://mnabe.org/sites/default/files/SFY_2015_Reporting_Requirements_0.pdf)

What is this metric intended to measure?

This metric measures the rate at which individuals transition to college from ABE.

Who has influence over the outcomes of this metric?

This metric is influenced by the stability of the job market and the economy, fluctuations in the knowledge economy related to job skills, the stability of family relationships and the need to support a family.

Context for Metric and Usage:

This metric relies on an understanding that for many adults may enroll in ABE for many reasons (basic literacy skills, English language skills, career preparation, completing their high school credential, citizenship preparation). Upon completion, adults may face unique challenges in transitioning to college. This metric also relies on learner's educational function at the time of uptake, on the learner's status in the labor force, on the availability of meaningful and convenient postsecondary education, on the support available to the learner in all arenas of life, on the learner's health of all types, and on the related and additional needs and responsibilities of the learner.

Limitations and Caveats:

While measuring the enrollment activity of adults participating in ABE or taking the GED, it may not be good measure of the effectiveness of transitions for ABE participants or GED completers to college without better understanding of the individual learner's goals and educational journey.

Starting strategies

Strategies for increasing postscondary enrollment among adults who completed ABE or a GED include: academic scheduling that is predictable and/or accelerated, andaligned to the schedule needs of working adults, access to needed services on campus on evenings and weekends, robust prior learning assessment policies and practices for obtaining credit for military or work

experience, advisors who are knowledgeable about adult learners, understanding and preparing for academic assessments (e.g. Accuplacer tests), and eligibility for financial aid (Kazis, Callahan, Davidson, McLeod, Bosworth, Choitz & Hoops, 2007).

Resources:

Silliman, R., & Scheleifer, D. (2018). A Major Step: What Adults Without Degrees Say About Going (Back) to College. San Francisco: Public Agenda.

Kazis, R., Callahan, A., Davidson, C., McLeod, A., Bosworth, B., Choitz, V., & Hoops, J. (2007). Adult learners in higher education: Barriers to Success and Strategies to Improve Results (Occasional Paper 2007-03). U.S. Department of Labor. Washington, DC. Retrieved from https://jfforg-prod-prime.s3.amazonaws.com/media/documents/adultlearners.dol_.pdf

Graham, H. (2015). Re-engaging with Education as an Older Mature Student: Their Challenges, Their Achievements, Their Stories. (Doctoral Dissertation). Dublin, Ireland: Dublin Institute of Technology.

Carrell, S., & Sacerdote, B. (2017). Why do college-going interventions work?. American Economic Journal: Applied Economics, 9(3), 124-51.

Page, L. C., & Scott-Clayton, J. (2016). Improving college access in the United States: Barriers and policy responses. Economics of Education Review, 51, 4-22.

METRIC 13c: Postsecondary Enrollment of Adults

We chose this metric because measuring the transition of high school graduates to postsecondary education is incomplete. For purposes of advancing the state's educational attainment goal, increasing college completion rates of adults age 25-44 who have not enrolled in or completed a college certificate or degree is important. A leading indicator of college completion is enrollment in college.

Definition:

This metric can be defined as the percentage of persons aged 25-44 without an associate degree or higher who are currently enrolled in postsecondary education.

Data Source and Availability for Metric:

Data for this metric comes from the U.S. Census Bureau. American Community Survey One-Year Public Use Microdata Sample.

What is this metric intended to measure?

This metric measures participation in postsecondary education among older adults as defined by the rate of enrollment among adults aged 25 to 49 who have earned at least a high school diploma or GED but have not yet earned an associate degree or higher. When taken into context with current attainment rates of adults in the state, the postsecondary enrollment rates of adults indicates the level to which this population is successfully accessing higher education.

Who has influence over the outcomes of this metric?

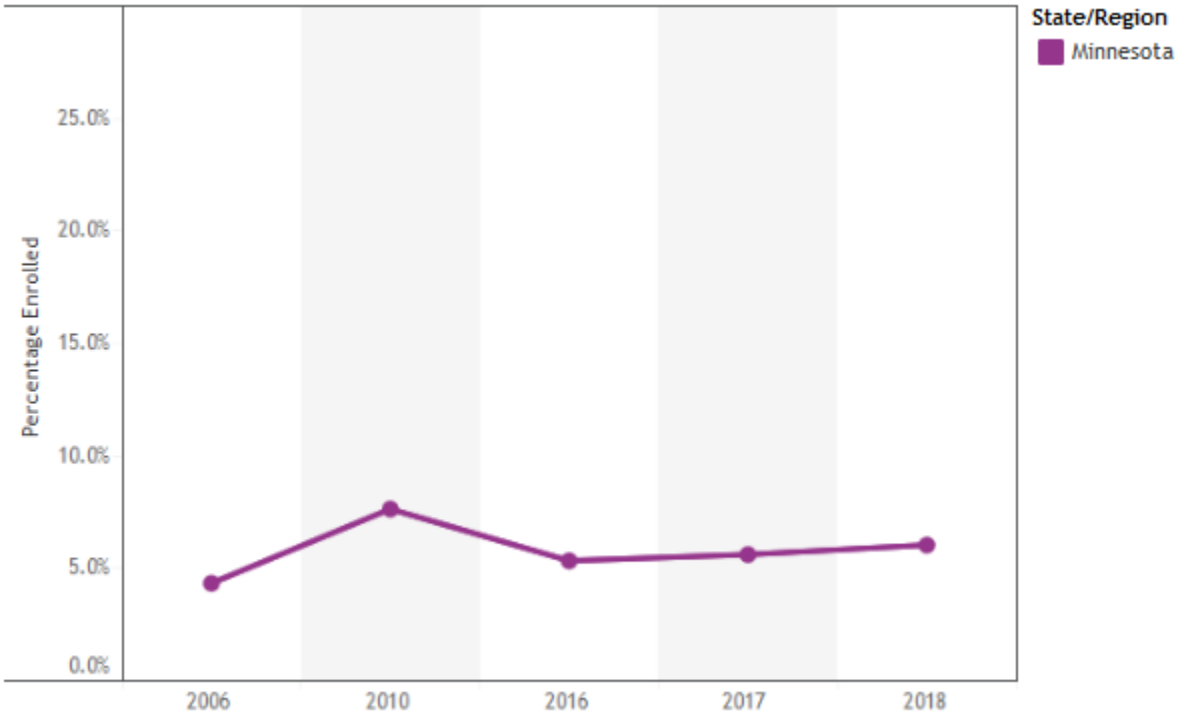
This metric is influenced by the awareness of and ability to access postsecondary programs by adults within the state. As with younger students, there are several factors that are critical such as affordability, location, admissions standards, college readiness, etc.

This metric is also influenced by college admissions and outreach practices, college class schedules, specifically evening and weekend and online programs, college costs, state funding for need-based financial aid programs, employer funded training programs.

Disaggregation

Data is not easily accessible by state and race/ethnicity. Figure C16 shows the overall current college participation rate for Minnesotans age 25-49.

Figure C16. Percentage of Persons Aged 25-49 without an Associate Degree or Higher who are Currently Enrolled in College



Source: U.S. Census Bureau. *American Community Survey One-Year Public Use Microdata Sample.*

Context for Metric and Usage:

This metric relies on an understanding that for many adults, advancing their careers is the primary reason for potentially pursuing postsecondary education (Silliman & Scheleifer, 2018). However, adults wanting to enroll in college may not be able to quit their jobs to enroll in college. Thus, they face unique challenges, including navigating the college system, finding flexible work schedules, balancing work and family obligations, paying for school, and finding childcare. Finishing college may take longer because they are more likely to enroll part-time and/or may transfer between colleges or programs as their life and educational needs change (Graham, 2015; Silliman & Scheleifer, 2018).

Limitations and Caveats:

As this metric uses census data, it cannot distinguish between adults enrolling and completing a certificate from an adult who enrolled but did not complete an Associate degree or higher award. The census questionnaire collects whether the individual has enrolled in college, and if the individual has completed a degree (Associate degree or higher). To solve for this limitation the overall educational attainment measure produced by the Minnesota Office of Higher Education includes estimates from the State Demographer's Office using actual completions data from Minnesota colleges to calculate the percent of individuals with some college and

certificate completion. However the statistical adjustment created by the Demographer's Office would need to be recreated for participation data.

Starting strategies

Strategies for increasing enrollment among adults could include: academic scheduling that is predictable and/or accelerated, access to needed services on campus on evenings and weekends, robust prior learning assessment policies and practices for obtaining credit for military or work experience, advisors who are knowledgeable about adult learners, understanding and preparing for academic assessments (e.g. Accuplacer tests), and eligibility for financial aid (Kazis, Callahan, Davidson, McLeod, Bosworth, Choitz & Hoops, 2007).

Much like in the case of adults who never pursued a degree, strategies to increase the overall state's educational attainment could also include a plan for re-engaging adults who have some college but no degree. To engage these learners, institutions could adapt how they recruit adult learners to come back to school, provide more guidance about tuition and other financial costs of education (such as, housing, transportation, food), and could provide flexibility in class offerings, and could offer an array of services support adult learners in school until completion.

Resources:

Silliman, R., & Scheleifer, D. (2018). A Major Step: What Adults Without Degrees Say About Going (Back) to College. San Francisco: Public Agenda.

Kazis, R., Callahan, A., Davidson, C., McLeod, A., Bosworth, B., Choitz, V., & Hoops, J. (2007). Adult learners in higher education: Barriers to Success and Strategies to Improve Results (Occasional Paper 2007-03). U.S. Department of Labor. Washington, DC. Retrieved from https://jfforg-prod-prime.s3.amazonaws.com/media/documents/adultlearners.dol_.pdf

Graham, H. (2015). Re-engaging with Education as an Older Mature Student: Their Challenges, Their Achievements, Their Stories. (Doctoral Dissertation). Dublin, Ireland: Dublin Institute of Technology.

Carrell, S., & Sacerdote, B. (2017). Why do college-going interventions work?. American Economic Journal: Applied Economics, 9(3), 124-51.

Page, L. C., & Scott-Clayton, J. (2016). Improving college access in the United States: Barriers and policy responses. Economics of Education Review, 51, 4-22.

METRIC 14: Persistence

We chose this metric because transitions between year one and year two are a common time for students to stop out from higher education and are crucial for degree completion. The persistence rate is measured by the percentage of students who return to college at any institution for their second year, while the retention rate is by the percentage of students who return to the same institution.

Students attaining a credential in their first year are accounted for in persistence and retention rates. This metric is designed to help institutions understand trends and patterns in this important early success indicator, and identify disparities by institutional type, degree level, starting enrollment intensity, state, and student demographic factors such as age, gender, and race/ethnicity.

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

Data Source and Availability for Metric:

The Office of Higher Education can match data across institutions and terms to calculate persistence for Minnesota students enrolling in Fiscal Year 2005 or later. This linked data allows the OHE to assess the persistence and completion rates of new entering resident undergraduates at multiple points in time and across institutions. We can also use retention rates by individual institutions as reported for IPEDS; however analysis is limited to a single institution for a defined cohort as opposed to state level analysis for all students.

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 groups of students (race and ethnicity, geography, age, and Pell grant recipients).

Who has influence over the outcomes of this metric?

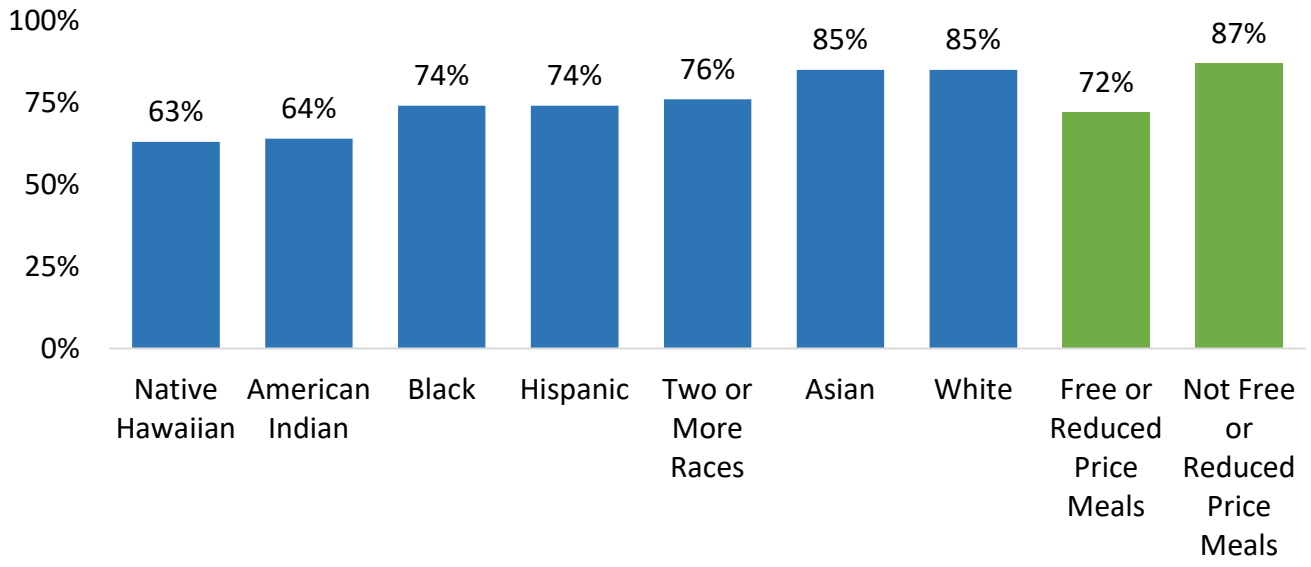
State government, federal government and institutions all have influence on this metric through college costs and access to need-based financial aid as financial need is a primary reason students stop out. The state and institution can influence this outcome directly through student supports and programs addressing the reasons students leave college without

completing a credentials (academic supports, financial aid); though the student has primary influence over the decision to re-enroll.

Disaggregation, sector of enrollment

Figure C17 displays data similar to the metric proposed here. Figure C17 presents persistence rates for students by race, limited to high school graduates. Figure C17 is limited to high school graduates from 2017. Gaps in persistence rates of 10 to 20 percentages points are seen for underrepresented students.

Figure C17. College Persistence Rates Year 1 to Year 2 for Minnesota Public High School Graduates, Class of 2017 Enrolled in Any College in Minnesota or Out of State



Source: SLEDS

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. Affordability and academic success are also factors in the persistence discussion. The complexity lies in untangling these interrelated 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).

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.

Institution Type: Persistence rates vary significantly based on the type of institution the student attends (public four-year, public two-year, private not-for-profit four-year, etc.). Given differing admissions standards, and the different income and demographic profiles of students enrolling, it is important to differentiate rates by institution type in order to prevent false conclusions from being drawn.

Excludes non-award-seeking students: Generally, measures of persistence exclude students who are not seeking to complete a certificate or degree. This would include high school students enrolled in dual credit courses, individuals enrolling in a single course, and individuals enrolling in customized training or other non-credit programs.

Requires continued work with institutions: This data collection and reporting would be new but mirrors work done on a national scale through the Postsecondary Data Partnership initiative. As such the Office will continue to work with institutions to validate the data reported.

Starting strategies

Strategies should be tailored to the barrier identified (financial, academic readiness, campus diversity and inclusion). Research indicates that the difference in persistence rates for students of color and American Indian students partially results from a lack of sense of belonging, low socialization, and negative campus climates. These may be common experiences among students of color and American Indian students who attend predominantly white institutions (institutions in which white students account for 50 percent or more of the student body) (Booker, 2016). These negative experiences leave students of color and American Indian students feeling excluded, having low self-esteem, and ultimately experiencing low motivation and desire to persist and complete their degrees (Booker, 2016; Museus & Harris, 2010; Tovar, 2016).

Strategies can include: social and campus integration programs(first-year programs, service-learning, and summer-bridge programs); programs promoting long-term success (proactive advising and degree mapping); alternative delivery models for developmental education(courses, mainstreaming into credit-bearing courses with added support, and co-curricular programming); and emergency assistance programs addressing unforeseen student financial needs related to food and housing insecurity.

Addressing financial need of students: Financial aid, but more specifically need-based aid, is a prerequisite for making educational opportunities available to students from a wide range of backgrounds. Even an education that is likely to pay off well, and thus be affordable in retrospect, is out of reach for those with the most limited resources.

Resources:

Booker, K. (2016). Connection and Commitment: How Sense of Belonging and Classroom Community Influence Degree Persistense for African American Undergratuate Women. *International Journal of Teaching and Learning in Higher Education*, *28*(2), 218-229.

Museus, S. D., & Harris, F. (2010). Success among college students of color: How institutional culture matters. *Managing diversity:(Re) visioning equity on college campuses*, 25-44.

Tovar, E. (2016). The Role of Faculty, Couselors, and Support Programs on Latino/a Community College Students' Success and Intent to Persist. *Community College Review*, 43(1), 46-71.

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.

METRIC 15: Progress to completion

We chose this metric because while college completion is the primary measure, we can break it down into progressive steps indicating within annual timeframes "how much" of the certificate or degree the student has completed.

Definition:

There are two potential metrics in this area. Both metrics measure offers a view of how successful students are at completing the credits they attempt at 12-month intervals. As higher first-year credit completion rates are linked with higher credential completion rates, this metric can help identify student populations needing early intervention.

1. A Credit Completion Ratio - A student's individual credit completion ratio is derived by dividing the total number of credits earned in the first academic year by the total number of credits attempted. The average of all student ratios across an academic year yields the institution's credit completion ratio for that academic year
2. Progress to Completion Ratio - Students are placed into a "First Term of Entry" cohort (all first-time students) and a "New Transfer Students" cohort (if transferring). Cohort progress rates are calculated using a numerator equal to the number of entering students meeting the credit threshold within the timeframe chosen and a denominator equal to the total number of entering students. This measure can be differentiated by first-time or transfer entry status.

For Minnesota, the tracked thresholds recommended are shown in Table C3. :

Table C3. Credit Thresholds for Measuring Progress to Certificate or Degree

Certificate (1 Year)	**Credit Threshold 1**	**Credit Threshold 2**
12 months after entry	50% (15 of 30 credits)	100%
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 after entry	12.5% (15 of 120 credits)	25%
24 months	25%	50%
36 months	50%	75%
48 months	75%	100%

Data Source and Availability for Metric:

Data available to track progress to degree is limited. We can track credits accumulated by students over time since entry into college. We cannot track the number of credits required to complete their programs for 2 reasons. First, program lengths vary within award levels (e.g. Associate 60 credits-72 credits). Secondly, we do not know if all credits accumulated fulfill requirements of the chosen program.

Success in keeping students "on track" to completion could be measured by the percentage of students passing established credit percentage thresholds year-by-year, based on standardized degree credit totals (e.g. 30 credits in year 1, 60 credits in year 2, etc.). This metric will require that entering students be disaggregated by initial degree at time of enrollment.

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.

Who has influence over the outcomes of this metric?

Institutions affect credit accumulation through numerous policies and practices/programming. 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 and complete coursework.

Disaggregation, sector

This metric is new, thus data is not available.

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. 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. 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. 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. Incorporating this parameter makes tracking students seeking certificates more difficult; however, credit accumulation is traditionally examined in order to monitor longer-term degree seekers.

Developmental Education Coursework: Students generally do not receive credit for the completion of developmental education courses. This fact can result in students enrolled in such coursework failing to meet established credit thresholds. Developmental education coursework is sometimes identified as a hindrance to degree completion. 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 four-year institutions is more complex – factors such as the course subject (math, writing, etc.) and whether or not a remedial course is applicable to the academic major affect outcomes.

Starting strategies

Strategies could include identifying why students take fewer credits, (finances, schedule of courses) and adjusting programs to meet the needs of students.

Resources:

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

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.

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.

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

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

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

METRIC 16: Affordability

College affordability impacts both college access and completion. Currently no agreed upon definition of "affordable" higher education exists. Furthermore, the definition of affordability will differ between the perspective of a family and the perspective of the state or institution. For families, affordability is a more subjective measure as family needs and resources vary. As such, affordability can be defined as the ability of an individual (or family) to purchase needed or appropriate education and still have sufficient income to enjoy at least the minimum consumption of other essential goods and services. Individual families determine minimum consumption. For the state, affordability would reflect the share of individuals who can afford to enroll (purchase education) by income or available resources in order to achieve the desired behavior (e.g. college enrollment, persistence, and completion).

Affordability can be measured in 3 ways:

1. Affordability at Entry – Does the individual or family have adequate resources to purchase initial entry into higher education? This is very similar to housing where buyers must save to cover a down payment before buying a home or access first-time home buyer programs.
2. Affordability of Repayment: Cumulative Debt Burden - Does the individual or family have adequate resources post-exit to repay any educational loans? In housing, this measure ascertains if the buyer can afford the monthly mortgage payment and related housing costs.
3. Affordability over a Lifetime: Return on Investment – Will the value of education received exceed the net cost paid by the individual? For homeowners, will your home's value go up or go down over time?

By breaking affordability into three distinct measures, we can better determine how to respond. We chose this metric because affordability, in all three contexts described, is considered a hurdle to postsecondary access, retention, and completion. The easiest way to measure return on investment of a college education is to compare net earnings after college attributable to the education gained to the net cost of the education. For students, ideally the net earnings over the first 10 years after college would exceed the net cost of college – a positive return on investment. However, addressing affordability at entry robustly can serve to mitigate the post-college financial pressures measured by affordability over a lifetime and affordability of repayment.

Definition:

1. Affordability at Entry: Does the individual or family have adequate resources to purchase initial entry into higher education?

   Measured by comparing resources available to the student to cost of attendance (adjusted or unadjusted). If available resources exceed cost, then higher education is affordable.If available cost exceeds resources, then higher education is not affordable.

   Basic resources available to families and students include current family income, family assets, income from student work, and federal student loans. This approach assumes

that families will contribute a reasonable percentage of current income and assets towards paying the cost of college. Similarly, students are assumed to contribute a reasonable percentage of income (work) and savings or assume a reasonable debt burden. As the financial aid system is currently structured, the contributions required of students and families, especially middle- and upper-middle income families, and adult with no children, likely exceed what one would call "reasonable".

Cost of attendance may be adjusted by the individual in order to achieve affordability (e.g. choosing a lower cost apartment or living at home, renting textbooks or using open educational resources, busing to college). Living expenses related to college are a significant portion of the cost of attendance but are subject to individual choices about spending.

2. Affordability of Repayment: Cumulative Debt Burden - Does the individual or family have adequate resources post-exit to repay any educational loans?

   Measured by comparing student loan payments (limited to 10% of gross income over a 10-year period) to total debt owed. If the individual can pay off educational loans over a ten-year period using 10% or less of gross income, then higher education is affordable. If the individual cannot pay off educational loans over a ten-year period using 10% or less of gross income, then higher education is not affordable.

3. Affordability over a Lifetime: Return on Investment – Will the value of education received exceed the net cost paid by the individual?

   Measured by comparing the net earnings gained from the individual's postsecondary education to the total out-of-pocket cost paid by the individual. If net earnings exceed net cost, the individual's return on investment is positive and higher education is affordable. If net cost exceeds net earnings, the individual's return on investment is negative and higher education is not affordable. As opposed to "lifetime" net earnings, this measure is based on the first ten years of employment post-exit.

Data Source and Availability for Metric:

Data for this metric is currently being developed by OHE.

What is this metric intended to measure?

This metric measures the affordability of higher education through comparisons of costs and resources available to the individual.

Who has influence over the outcomes of this metric?

Affordability is the responsibility of students, families, institutions, and taxpayers/government. In addition, communities and philanthropic organizations have stepped in to assist students with college costs.

Disaggregation

Data disaggregated by student demographics other than income and age is not currently available. The Minnesota Office of Higher Education is working to build the data sets needed for these affordability metrics and has planned to include student demographics.

Context for Metric and Usage:

This metric relies on an understanding of how higher education financing and financial aid works. Furthermore, it relies on an understanding that how we educate students and families about planning for and paying for college needs improvement.

Limitations and Caveats:

Enrolling in college does not equate to completing college, so stakeholders may want to weigh affordability measures by the percent of students who complete their program in order to obtain a truer picture of effective affordability policies. Financial aid is a process that heavily relies on income or financial need for determining eligibility and funds allocation. As such, processes and systems may include inherent biases that are not apparent given the absence of data disaggregation by race, gender, and disability status. Financial aid is a federally controlled system. The Minnesota Office of Higher Education and Minnesota's colleges face administrative challenges if seeking to put in place more responsive measures of financial need to create a more affordable funding system.

Starting strategies

States and colleges could:

- Invest in need-based financial aid (grants and scholarships)
- Providing better communication about aid availability and eligibility
- Investing in emergency aid for students (e.g. rental assistance, car repair assistance, food shelfs)
- Ensuring appropriate levels of state funding for public institutions
- Encourage students and families to start a college savings plan, develop a financial plan/budget for their college student, increase parent engagement in college planning.

Resources:

The Urban institute: Understanding College Affordability http://collegeaffordability.urban.org/

METRIC 17: Faculty Diversity

The working group chose this metric because of the clear pattern of research findings linking the match between postsecondary student and faculty diversity ("if I can see it, I can be it") and a myriad of student success metrics including higher grades, GPA, improved retention and progression toward graduation. Having a diverse faculty increases the likelihood of diverse students engaging deeply with their institution, the opportunities for all students to question their perceptions and preconceived notions, leadership opportunities for students in their matched groups, and the preparation of all students for the workplace.

This metric should be taken from two populations: one comprised of all instructional faculty associated with an institution irrespective of their teaching or research focus or contract type, and one comprised specifically of tenured or tenure-track full-time faculty, in that research has shown the gender and race/ethnicity makeup of these two groups to be crucially different for some sectors and institutions. Among institutions with tenure systems, tenure-track and tenured positions tend to be the most stable, respected and highest paid. The message for institutions managing both populations should be the same: diverse faculty increase successful outcomes for all students and irreplaceably for students like them.

Definition:

> The metric is defined as the percentage of (all faculty / tenured & tenure-track full-time faculty) who are of at least two reference groups: female or not male, and of a race/ethnicity that is not white. This will yield at least two percentages per institution that can be rolled up to a system/region/sector/state/national level.
>
> Alternative measures include:
>
> - Calculating the difference between the share of persons of color among the adult population (people aged 21-65) and the share of faculty.
> - Calculate a student-faculty parity index calculated as of the share of students of color to the share of faculty of color –such an index helps to explore opportunity for potential exposure between students and faculty, regardless of the size of the population of color in a region. Districts can be group into four categories: "parity" means the student-faculty parity index is less than 1.5; "small ratio" represents an index value of 1.5 to 2.5; "moderate ratio" represents a value of 2.5 to 4; and "large ratio" represents index values greater than 4.

Data Source and Availability for Metric:

> For ease of collection, it is recommended that this metric be sourced from the Integrated Postsecondary Education Data System (IPEDS) Human Resources survey. All faculty is defined as the population of full-time and part-time instructional and instruction/research/public service (IRPS) staff summed together. Tenured and tenure-track faculty is defined as the population of tenured and tenure-track instructional and IRPS staff from the full-time employee section.

Both gender and the calculated form of the federal race/ethnicity reporting variable are available for both populations at the level of aggregation. For purposes of this metric, the race/ethnicity percentage will be calculated as the summed count of faculty who are reported as American Indian or Alaskan Native, Black or African-American, Asian, Native Hawaiian/Pacific Islander, Two or More Races and Hispanic/Latino divided by the total.

Typically, IPEDS Human Resources data is available to the public via the IPEDS website approximately 18 months after the November 1 snapshot at which it is recorded. Human Resources data accessed on September 1, (year) will represent faculty counts as of November 1, (year-2).

What is this metric intended to measure?

These metrics are intended to measure the percentage of non-white and non-male faculty that might expect to encounter during their time at an institution... These metrics will provide institutions and larger entities a way to monitor their progress to diversifying their faculty makeup, students with a way to evaluate the sufficiency of environments in which they desire to matriculate, and community and government stakeholders a way to evaluate the degree to which our institutions reflect the community at large.

Who has influence over the outcomes of this metric?

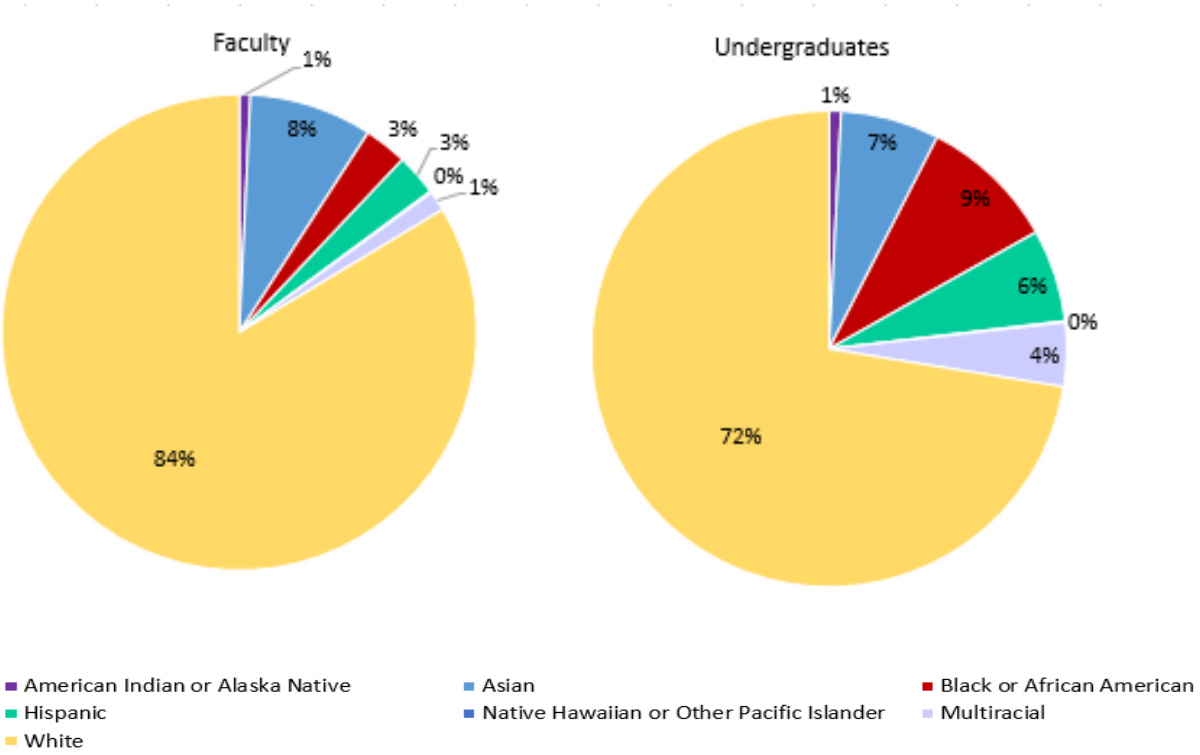
Postsecondary leadership and administration, in particular deans, department chairs and hiring managers, have direct control over the outcomes of this metric and must take responsibility, particularly given the outsize influence of a single long tenure of a faculty member in comparison to the multitudes of generations of students who will be influenced by that faculty member's presence for good and for bad. Indirectly, the funnel of graduate students into the professoriate and the other career lines for postsecondary teachers must be seeded with the appropriate candidates to allow for diverse hiring of faculty members.

Disaggregation

This data is reported and compiled at the institutional level, and thus can be rolled up to system, sector or state levels, but cannot be disaggregated by sub-institutional variables such as academic department or college within an institution. Because this metric is intended to measure the prevalence of faculty members who are not white males, further disaggregation would be encouraged on the institutional level to examine staffing patterns and inform efforts to address distance from any institutionally stated goals, and could occur at the sub-institutional level to guide strategic planning. Any sub-institutional data would not be publicly available to peer or aspirant peer institutions.

Data for this metric should always be contextualized by inclusion of student diversity data for consideration of match. When disaggregated, we see that the proportion of individuals of color employed as faculty in Minnesota (16%) is lower than the proportion of individuals enrolled as undergraduate students (28%) as shown in Figure C18.

Figure C18. Faculty Race/Ethnicity compared to Student Race/Ethnicity – Minnesota Institutions, Fall 2018



Source: IPEDS

Context for Metric and Usage:

An institution or higher order group may elect to examine at a more granular level than these two reference groups, such as nonbinary, underserved or faculty of specific race/ethnicity groups. It should be clear, however, that these subsequent percentages fit within the two baseline reporting metrics.

Limitations and Caveats:

It is understood that some information will be lost by the inability to glean more information from the faculty who are reported as Nonresident Alien (note this verbiage will age out with the next OMB clearance), as these faculty members' race/ethnicity information is supplanted by indication of their immigration status. Also, faculty can be reported of unknown race/ethnicity and this may result in loss of information.

It is also understood that as IPEDS currently requires both student and employee reporting to conform to the gender binary, that information about those who don't will be lost. However the standardization of the existing categories and the Title IV-linked requirement to report these data make them the most readily and publicly available source for this information.

It is also understood that institutions without tenure systems or with largely transient instructional staff must decide how to identify a comparable group and reflect this group composition in their IPEDS reporting, or indicate that the comparison is not valid for their institution. An example of a good-enough comparison might be all full-time instructional faculty.

Starting strategies

To move the needle on faculty diversity, immediate and concrete goals must be set and adhered to on the part of all postsecondary entities who are looking to hire. Gaps must be managed on an annual basis. Investments should be made in the pipeline of doctoral candidates (for research universities, departments with tenure systems), as well as financial incentives provided to recruit, set up and develop young diverse faculty. Institutions without tenure systems or with a significant CTE component may find greater success in priming the pipeline by recruiting within industries and outside the typical sources for instructional staff. Both efforts require an ongoing commitment to strong and deliberate faculty development, as well as a statewide focus on rewarding institutions that strive to bring a diverse faculty to their diverse student bodies.

Resources:

Griffin, K. A. (2019). Redoubling Our Efforts: How Institutions Can Affect Faculty Diversity. Retrieved 07/31/2020 from https://www.equityinhighered.org/resources/ideas-and-insights/redoubling-our-efforts-how-institutions-can-affect-faculty-diversity/

Stout, R., Archie, C., Cross, D., & Carman, C. A. (2018). The relationship between faculty diversity and graduation rates in higher education. *Intercultural Education*, *29*(3), 399-417. https://www.tandfonline.com/doi/abs/10.1080/14675986.2018.1437997

Llamas, J. D., Nguyen, K., & Tran, A. G. (2019). The case for greater faculty diversity: examining the educational impacts of student-faculty racial/ethnic match. *Race Ethnicity and Education*, 1-17.

Opinion: Fixing hiring practices to increase faculty diversity https://hechingerreport.org/opinion-diverse-faculty-hiring/

Barriers to Faculty Diversity https://tomprof.stanford.edu/posting/1334

METRIC 18: Credit Acceptance/Credit Transfer (Credit Mobility)

Credit acceptance and credit transfer, also known as credit mobility, is a process that is confusing to some students, complex to navigate, and likely negatively impacts students without college knowledge disproportionately. At the same time, when it is successful, the transfer and acceptance of credits can speed up a student's progress in college and increase the likelihood of college completion and reduce costs.

Existing policies do not address the common reasons students lose credit: student uncertainty and resource-constrained advising. As discussed by college staff and students, one of the primary reasons for degree program credit loss was student uncertainty about their majors and destination institutions. This was a pervasive and consistent reason for credit loss and may prevent students from fully taking advantage of seamless transfer policies available. The second major reason cited for credit loss was a lack of early, personalized, and knowledgeable advising for students interested in transfer. Participants felt student uncertainty about their majors and destination institutions could be mitigated by individualized and early advising, but community college student services staff struggle to provide such advising to students due to large case-loads and other demands on their time. Across all systems, community college students had to be largely self-directed in finding their path and taking the right courses to avoid credit loss.

Definition:

This metric is defined as the share of credits being accepted for transfer by an institution.

Data Source and Availability for Metric:

Data for this metric is not currently available. Many institutions do not record credits assessed for transfer but not accepted. Furthermore, many institutions cannot track the program source of the credits accepted (e.g. PSEO credits will appear as credits transferred from a PSEO participating institution). However, this is an ideal metric to track for the reasons stated above.

What is this metric intended to measure?

This metric measures the extent to which college are accepting credits for transfer.

Who has influence over the outcomes of this metric?

This metric is influenced by college policies and practices, articulation agreements, students' ability to navigate the transfer of credits process, and academic advisors.

Disaggregation

When disaggregated, we see that a lower percentage of American Indian, Black, Hispanic, Native Hawaiian, and multi-racial students have credits accepted for transfer when entering college are new freshman as shown in Table C4.

Table C4. Transfer Credits at Entry - 2019 New Entering Students

	Freshmen	Freshmen	Transfer	Transfer
	Percent with credits	Average number of transfer credits	Percent with credits	Average number of transfer credits
American Indian or Alaska Native	17%	16.30	77%	49.75
Asian	40%	19.92	81%	50.83
Black or African American	13%	17.71	79%	49.84
Hispanic or Latino	22%	15.95	83%	47.25
Native Hawaiian or Other Pacific Islander	20%	8.88	77%	48.42
White	44%	18.72	85%	51.93
Two or more races	30%	19.18	80%	44.80

Source: Minnesota Office of Higher Education, SLEDS

Context for Metric and Usage:

This metric relies on an understanding of how credit transfer in higher education works, the various ways students can earn credit prior to enrolling, and the difference between certificate/degree applicable credits versus elective credits.

Limitations and Caveats:

This metric is not a recommendation that all credits should transfer or be accepted by colleges. The transfer/acceptance decision must align with the individual students program of study and appropriate institutional policies.

Starting strategies

- Improving data systems and conducting research on credit mobility to determine policy effectiveness,
- Reviewing credit acceptance policies and practices for inherent bias,
- Automating the credit transfer process to ease the burden on students,
- Refining policies to better meet the needs of undecided students, and
- Developing “transfer college knowledge” early and at key times in students’ academic career.

Resources:

Hodara, M., Martinez-Wenzl, M., Stevens, D., & Mazzeo, C. (2016). Improving credit mobility for community college transfer students. Planning for Higher Education, 45(1), 51. https://educationnorthwest.org/sites/default/files/resources/credit-transfer-study-report.pdf

Fink, J., & Jenkins, D. (2017). Takes two to tango: Essential practices of highly effective transfer partnerships. Community College Review, 45(4), 294-310.

METRIC 19: Developmental Education Enrollments

We chose this metric because enrollment in developmental education is both a measure of college readiness, and an academic barrier for students to completing a college certificate or degree.

Developmental education is a term used to refer to courses offered by postsecondary institutions to prepare students for success in college-level work. For many educators, developmental education is a broader term encompassing pre-college-level education and other academic support services that may benefit students for any reason. Developmental education adds to the overall cost of college for students in terms of both tuition and opportunity costs for students who spend additional time finishing developmental course requirements before starting program-specific courses.

Enrollment in developmental education is disproportionately overrepresented by students of color, low-income, and first-generation students. Gaps in opportunity and subsequent achievement is evident in our current postsecondary institutions and is even more exacerbated in developmental education enrollment, persistence, and completion. Developmental education is not only key to significantly increasing educational attainment but is a key lever in addressing disparities in opportunities and outcomes by race and ethnicity and by income.

Definition:

> This metric is defined as the percent Minnesota public high school graduates who enrolled in developmental education courses at a Minnesota postsecondary institution, within two years of their high school graduation.

Data Source and Availability for Metric:

> Data for this metric comes from linking student level data within the Minnesota Statewide Longitudinal Education Data System (SLEDS) on Minnesota public high school graduates from the Minnesota Department of Education with college enrollment data from the Minnesota Office of Higher Education and the National Student Clearinghouse.

What is this metric intended to measure?

> This metric measures the percent of graduating high school students who are not college ready as defined by current placement into developmental education.

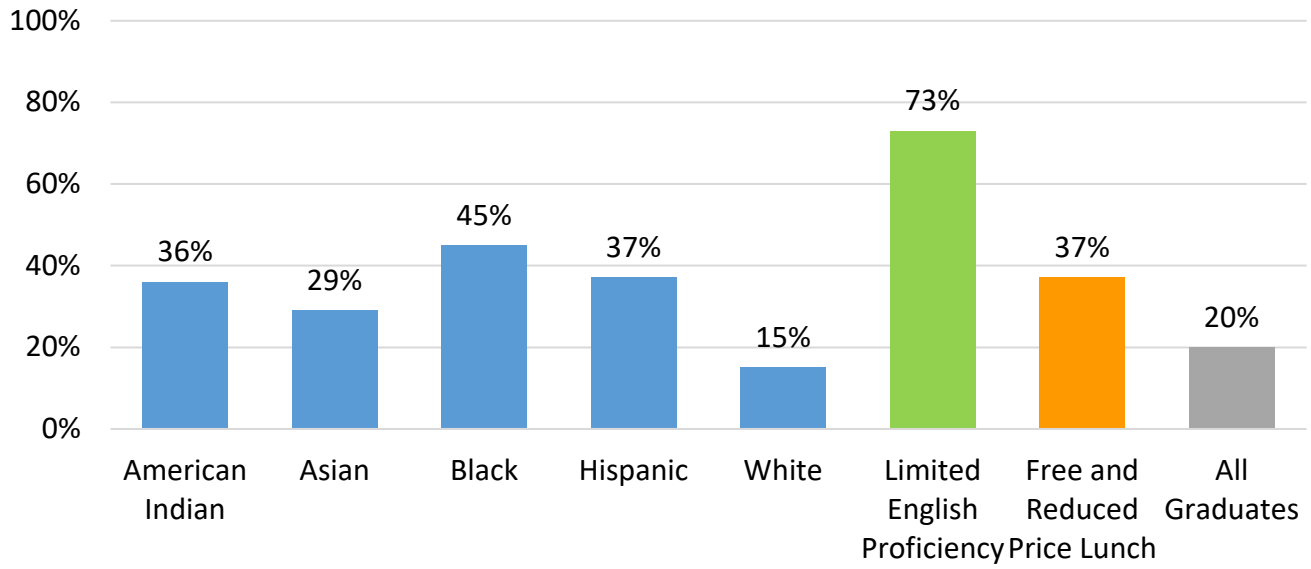
Who has influence over the outcomes of this metric?

> This metric is influenced by academic preparation, college knowledge, institutional policies and practices for placing students into developmental education (Accuplacer versus multiple measures, previous academic achievement, etc.), and academic structures and curriculum.

Disaggregation

When disaggregated, we see an overrepresentation of students of color, lower income students and students with limited English proficiency in developmental education courses as shown in Figure C19.

Figure C19. Developmental Education Enrollments* vary by Race/Ethnicity and English Language Learner Status, Class of 2017



Source: SLEDS

Context for Metric and Usage:

The process by which students are placed into developmental education is critical to understanding developmental education policy. Many Minnesota postsecondary institutions are improving the course placement process to increase the accuracy and effectiveness of student placement into college-level or developmental education courses. A number of postsecondary institutions are implementing pilots incorporating multiple measures into the course placement process, using more than one measurement or assessment such as high school Grade Point Average (GPA), high school courses and grades, or non-cognitive assessments to determine a student's readiness for college-level coursework. The Minnesota State Colleges and Universities system has a course placement process in which students can demonstrate college-readiness through score results from the ACT, SAT, Minnesota Comprehensive Assessments (MCA), and/or Accuplacer. Minnesota State is developing a holistic multiple measures program to be implemented by 2020-2021.

While institutions may determine a need for developmental education, students can also enroll in and complete many technical programs not requiring college-level skills in reading, writing and/or math.

Limitations and Caveats:

This metric does not measure college readiness of individuals not enrolling directly from high school (e.g. adult learners, students delaying enrollment 3-7 years).

As curricular reforms are implemented, this measure will become obsolete as fewer students will enroll in solely developmental education courses.

Starting strategies

- Redesigning curriculum and structures to provide needed academic supports,
- Improving the accuracy of course placement,
- Implementing a comprehensive student support system,
- Expanding and strengthening professional development for faculty, staff, and administrators

Resources:

Minnesota State Colleges and Universities, Academic Readiness
https://www.minnstate.edu/system/asa/studentaffairs/academicreadiness/

Minnesota State Colleges and Universities, Developmental Education Strategic Roadmap
https://www.minnstate.edu/system/asa/studentaffairs/academicreadiness/docs/Developmental-Education-Strategic-Roadmap.pdf

METRIC 20: College 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. 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.

Definition:

Students are placed into a first-term of entry cohort (all students) and a new transfer student cohort (if transferring). This rate measures the number of students completing a credential at a chosen point in time (2 years, 3 years, 4 years, 6 years) out of the number of students that started in that cohort. Students who transfer will be included in their first-year and their transfer cohorts. This will be a true measure of degree attainment for the cohort and not a

graduation rate, which only measures those students who start and complete at the same institution.

Students are grouped by cohort based on their first term as a certificate- or 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.

Data Source and Availability for Metric:

The Office of Higher Education can match data across institutions and terms to calculate completion rates for Minnesota students enrolling in Fiscal Year 2005 or later. This linked data allows the OHE to ascertain the completion rates of new entering resident undergraduates at multiple points in time and across institutions. We can also use graduation rates by individual institutions as reported for IPEDS; however analysis is limited to a single institution for a defined cohort as opposed to state level analysis for all students.

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 (race and ethnicity, gender, receipt of Pell Grant).

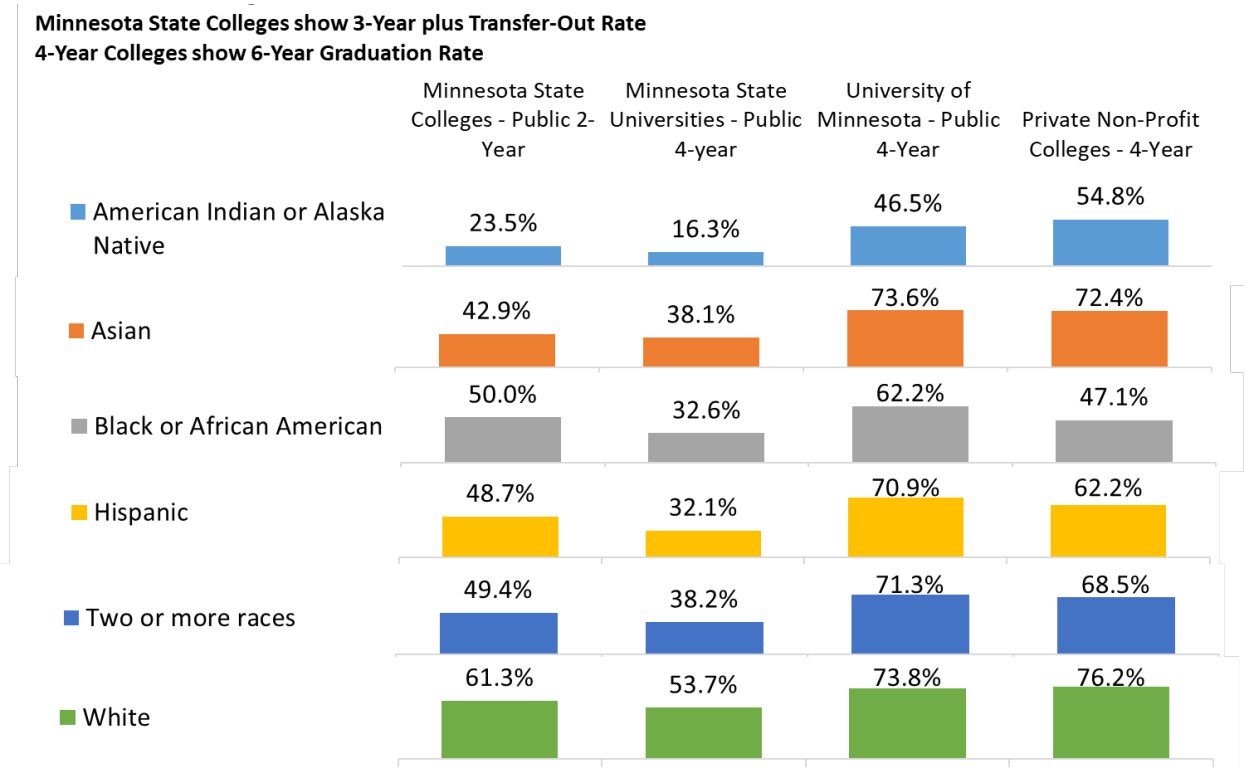
Who has influence over the outcomes of this metric?

Institutions have high influence over this outcome in relation to cost, culture, and academic support of students; though the student has primary influence over the decision to complete his/her program. Higher education costs, and thus state funding for higher education and need-based grants have influence over this outcome as affordability is a primary in college completion.

Disaggregation

When disaggregated, we see that American Indian, Black, and Hispanic students have substantially lower graduation rates than their peers as shown in Figure C20

Figure C20. Graduation Rates by Institution Type and Race/Ethnicity, Minnesota, 2018



Source: U.S. Department of Education, IPEDS; OHE

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, 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.

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 of Higher Education will continue to work with institutions to validate the data reported.

Starting strategies

Strategies could include targeting increased funding to students in need, creating a culture accessible and open to all students on college campuses, identifying, sharing, funding, and scaling best practices for persistence and completion.

Resources:

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.

Workforce Training

METRIC 21: Participation in Workforce Training

We chose this metric because the larger vision for attainment include industry-recognized credentials. These credentials can be obtained through a variety of workforce training programs.

Definition:

This metric is defined as participation in a workforce training program.

Data Source and Availability for Metric:

Initial data for this metric comes from DEED's Uniform Report Card system. The Uniform Outcomes Report Card is an online interactive dashboard which displays demographic and outcome-based data for adult workforce development programs administered by the Department of Employment and Economic Development (DEED). The Uniform Report Card program data comes from Workforce One, DEED's case management system for workforce development programs. All outcomes in the report card can be disaggregated by program as well as by educational attainment, gender, region, homeless status, and race. By breaking down outcomes for these groups, stakeholders can see who the programs are reaching and if outcomes differ.

Subsequent data should include programs offered by private providers such as those on DEED's Eligible Training Provider list for WIOA and the Department of Labor and Industry's Registered Apprenticeship Programs.

What is this metric intended to measure?

This metric measures annual enrollment in workforce training.

Who has influence over the outcomes of this metric?

This metric is influenced by the Minnesota Department of Employment and Economic Development, training program providers, the economic, employers, and individual participants.

Disaggregation

When disaggregated, we see that DEED's workforce development programs disproportionately serve persons of color in Minnesota as shown in Figure C21.

Context for Metric and Usage:

This metric relies on an understanding that changing economic conditions and populations impacts program participation and outcomes. In an economy with low unemployment, employers may be more willing to recruit from state-funded workforce training programs. As

the economy has improved, the people who come into the programs and their barriers to employment change.

Limitations and Caveats:

No two programs, or even grantees, are alike. The reason for these differences is that programs serve people with varying demographics, levels of skill, and workforce attachment. This makes assessing impact across one uniform metric difficult. For example, programs which serve individuals with a criminal background might have lower rates of full time employment measures. This might be because their clients have more challenges in obtaining a full time position due to the barriers they face. In addition, programs which serve individuals with multiple barriers to employment might have different outcomes in comparison to programs which serve those with fewer barriers, such as the Dislocated Worker program.

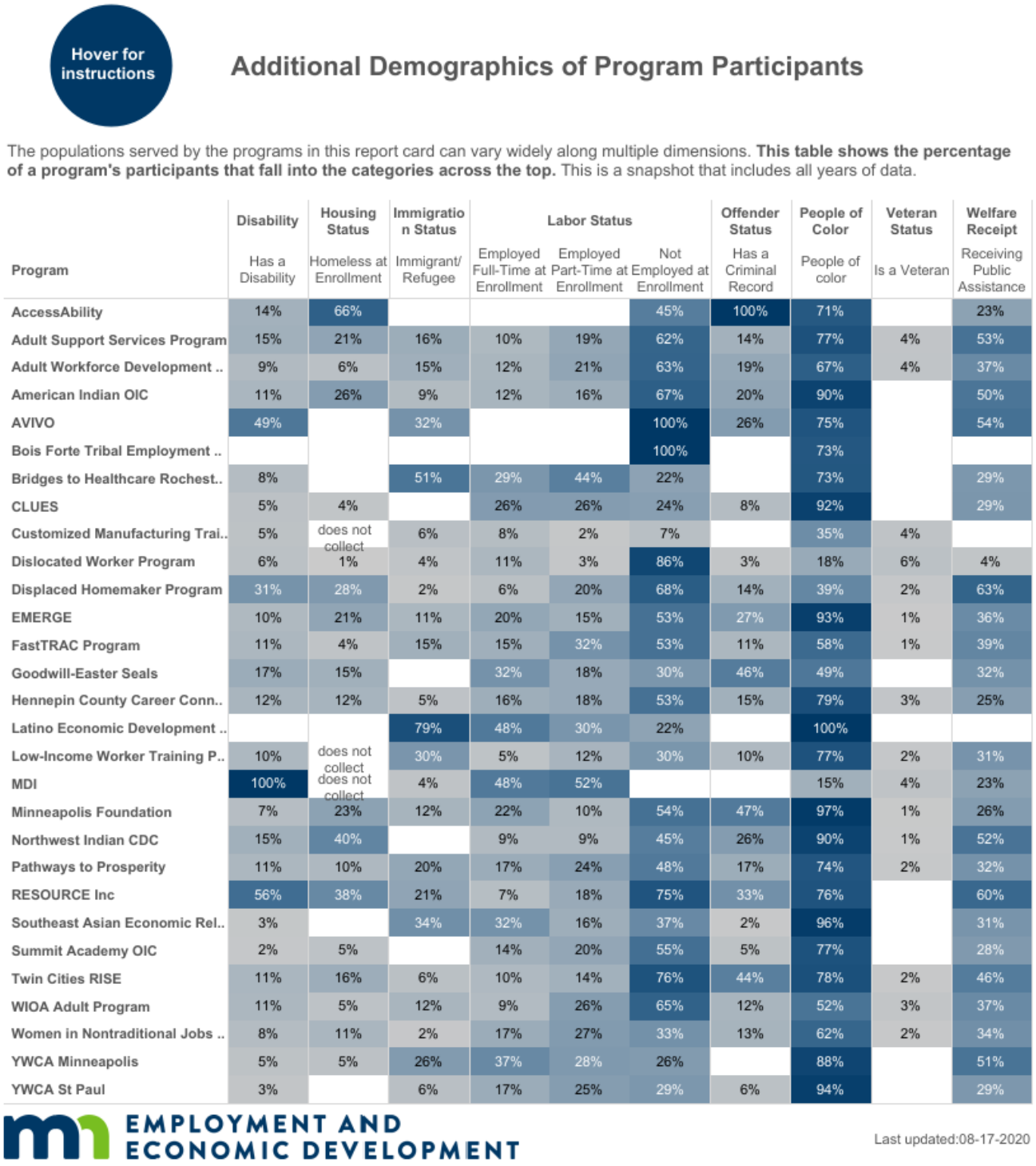
Starting strategies

Strategies could include increased knowledge of, availability of and access to workforce training programs.

Resources:

Minnesota Department of Employment and Economic Development, Uniform Report Card
https://mn.gov/deed/about/what-we-do/agency-results/perform-measures/report-card/

Figure C21. Demographics of Program Participants



Program	Disability	Housing Status	Immigration Status	Labor Status			Offender Status	People of Color	Veteran Status	Welfare Receipt
	Has a Disability	Homeless at Enrollment	Immigrant/ Refugee	Employed Full-Time at Enrollment	Employed Part-Time at Enrollment	Not Employed at Enrollment	Has a Criminal Record	People of color	Is a Veteran	Receiving Public Assistance
AccessAbility	14%	66%				45%	100%	71%		23%
Adult Support Services Program	15%	21%	16%	10%	19%	62%	14%	77%	4%	53%
Adult Workforce Development ..	9%	6%	15%	12%	21%	63%	19%	67%	4%	37%
American Indian OIC	11%	26%	9%	12%	16%	67%	20%	90%		50%
AVIVO	49%		32%			100%	26%	75%		54%
Bois Forte Tribal Employment ..						100%		73%		
Bridges to Healthcare Rochest..	8%		51%	29%	44%	22%		73%		29%
CLUES	5%	4%		26%	26%	24%	8%	92%		29%
Customized Manufacturing Trai..	5%	does not collect	6%	8%	2%	7%		35%	4%	
Dislocated Worker Program	6%	1%	4%	11%	3%	86%	3%	18%	6%	4%
Displaced Homemaker Program	31%	28%	2%	6%	20%	68%	14%	39%	2%	63%
EMERGE	10%	21%	11%	20%	15%	53%	27%	93%	1%	36%
FastTRAC Program	11%	4%	15%	15%	32%	53%	11%	58%	1%	39%
Goodwill-Easter Seals	17%	15%		32%	18%	30%	46%	49%		32%
Hennepin County Career Conn..	12%	12%	5%	16%	18%	53%	15%	79%	3%	25%
Latino Economic Development ..			79%	48%	30%	22%		100%		
Low-Income Worker Training P..	10%	does not collect	30%	5%	12%	30%	10%	77%	2%	31%
MDI	100%	does not collect	4%	48%	52%			15%	4%	23%
Minneapolis Foundation	7%	23%	12%	22%	10%	54%	47%	97%	1%	26%
Northwest Indian CDC	15%	40%		9%	9%	45%	26%	90%	1%	52%
Pathways to Prosperity	11%	10%	20%	17%	24%	48%	17%	74%	2%	32%
RESOURCE Inc	56%	38%	21%	7%	18%	75%	33%	76%		60%
Southeast Asian Economic Rel..	3%		34%	32%	16%	37%	2%	96%		31%
Summit Academy OIC	2%	5%		14%	20%	55%	5%	77%		28%
Twin Cities RISE	11%	16%	6%	10%	14%	76%	44%	78%	2%	46%
WIOA Adult Program	11%	5%	12%	9%	26%	65%	12%	52%	3%	37%
Women in Nontraditional Jobs ..	8%	11%	2%	17%	27%	33%	13%	62%	2%	34%
YWCA Minneapolis	5%	5%	26%	37%	28%	26%		88%		51%
YWCA St Paul	3%		6%	17%	25%	29%	6%	94%		29%

Source: Minnesota Department of Employment and Economic Development

METRIC 22: Completion of Workforce Training

We chose this metric because completing workforce training can translate into receiving a postsecondary credential or industry-recognized credential.

Definition:

The number of individuals completing workforce training by credential received.

Data Source and Availability for Metric:

Data for this metric comes from DEED's Uniform Report Card system. The Uniform Outcomes Report Card is an online interactive dashboard which displays demographic and outcome-based data for adult workforce development programs administered by the Department of Employment and Economic Development (DEED). This reporting is required under Sec. 7. Minnesota Statutes 2012, section 116L.98. The report card is publicly available and is updated quarterly. All outcomes in the report card can be disaggregated by program as well as by educational attainment, gender, region, homeless status, and race. By breaking down outcomes for these groups, stakeholders can see who programs are reaching and if outcomes differ. Subsequent data should include programs offered by private providers such as those on DEED's Eligible Training Provider list for WIOA and the Department of Labor and Industry's Registered Apprenticeship Programs.

What is this metric intended to measure?

This metric measures credential attainment by workforce training participants.

Who has influence over the outcomes of this metric?

This metric is influenced by the Department of Employment and Economic Development, training program providers, the economic, employers, and individual participants.

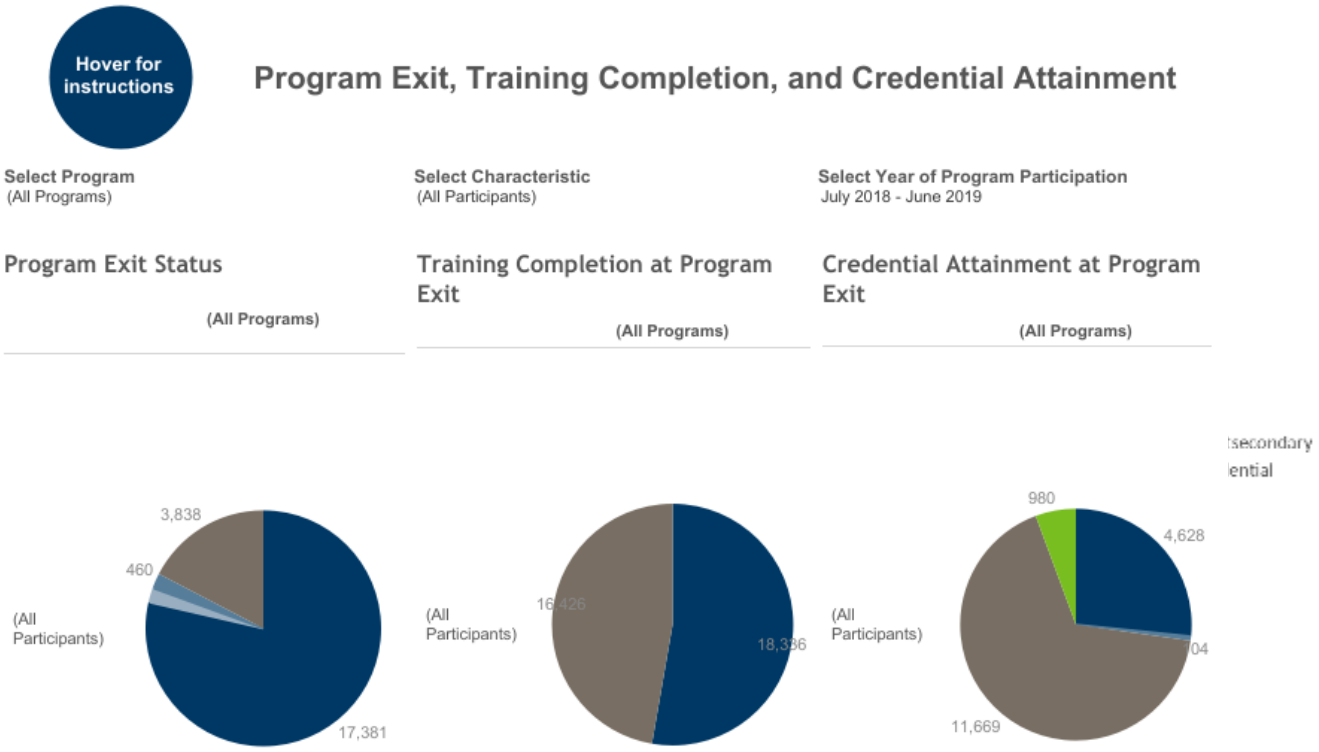
Disaggregation

Figure C22 shows the credential attainment of program leavers. Disaggregated data is available. When disaggregated, we see that DEED's workforce development programs disproportionately serve persons of color in Minnesota.

Context for Metric and Usage:

This metric relies on an understanding that changing economic conditions and populations impact program participation and outcomes. In an economy with low unemployment, employers may be more willing to recruit from state-funded workforce training programs. As the economy has improved, the people who come into the programs and their barriers to employment change.

Figure C22. Program Exit, Training Completion, and Credential Attainment for Participants of Minnesota Workforce Development Programs.



Source: Minnesota Department of Employment and Economic Development

Limitations and Caveats:

No two programs, or even grantees, are alike. The reason for these differences is that programs serve people with varying demographics, levels of skill, and workforce attachment. This makes assessing impact across one uniform metric difficult. For example, programs which serve individuals with a criminal background might have lower rates of full time employment measures. This might be because their clients have more challenges in obtaining a full time position due to the barriers they face. In addition, programs which serve individuals with multiple barriers to employment might have different outcomes in comparison to programs which serve those with fewer barriers, such as the Dislocated Worker program.

Starting strategies

Strategies include increased availability, knowledge of and access to workforce training programs.

Resources:

Minnesota Department of Employment and Economic Development, Uniform Report Card https://mn.gov/deed/about/what-we-do/agency-results/perform-measures/report-card/

METRIC 23: Completion of an Industry-Recognized Credential

Minnesotans leverage alternative postsecondary education and training pathways to improve employability and overall outcomes. These programs, especially those leading to an industry-recognized credential represent a critical outcome for state workforce development. We chose this metric because without a method to track industry-based certifications, it becomes difficult to determine how industry-based certifications fit into and benefit the overall education and workforce system. The number of CTE participants and concentrators completing industry-recognized credentials is requested by the U.S. Department of Education as part of Perkins reporting, but the inability of states to comprehensively track this information for students remains a problem.

Definition:

This metric is defined as the number of and rate at which Minnesotans earn industry-recognized credentials.

The distinction between certificates, licenses, and certifications is important for this metric, which exclusively examines practices for capturing data on industry-recognized certifications awarded through independent third-party organizations.

- Credential. A credential is the all-encompassing term used to describe any type of traditional and nontraditional award within the context of education, training, workforce, and employment development including certificates, licenses, certifications, and degrees.
    - Certificate. A certificate may be awarded by either an educational institution or independent education and training provider associated with specific programs of study.
    - License. A license is a type of nontraditional credential that is generally awarded by a government-regulated agency. This award may be granted by a federal entity, but usually comes from the state level. Unlike the two other credentials, a license is required before an individual may work in specific professions.
    - Certification: A certification is a type of nontraditional award to an individual that demonstrates proficiency and knowledge, through examination, in a specific industry or trade. As opposed to a certificate, obtaining a certification award is not dependent on any actual education or training program. Instead, evaluating candidates for certification relies on independent, third-party professional and industry-based groups. These national organizations develop and maintain relevant proficiency standards that are assessed and sanctioned by industry-approved examination facilities, independent of any educational institution or training program.

Data Source and Availability for Metric:

While no comprehensive certification data gathering model exists nationally or in Minnesota, many states are becoming more involved with integrating certifications into their educational and workforce system information.

What is this metric intended to measure?

This metric measures the number of individual earning an industry-recognized credential and thus contributing to the state's attainment goal.

Who has influence over the outcomes of this metric?

This metric is influenced by awareness of workforce training programs, knowledge of the certification process, and the ability of organizations and the state to collect certification data.

Disaggregation

No data currently exists for this metric.

Context for Metric and Usage:

This metric relies on an understanding of the role of industry-recognized certifications and the process for receiving them.

Limitations and Caveats:

This metric does overlaps with college completion in that colleges do offer training that prepares an individual for taking and passing an industry certification exam or assessment.

Starting strategies

- Strategies to improve data collection
    - Minnesota has joined Credential Engine, a national repository of education and training programs as part of an initiative between Minnesota State, DEED, and OHE. Merging education, training, and industry certification data allows project partners to understand how industry certifications are embedded in education and workforce training programs. This state registry information can be used as the starting point for collecting information about which individuals have education and industry-recognized credentials.
    - Florida developed an approved comprehensive industry certification list to provide guidance on in-demand certifications and required training as part of its expansion of K-12 career academies. Florida bolstered the alignment between secondary and postsecondary certification programs by adding academic and career courses, third-party assessment entities, and an enhanced ability to track and record individuals that

earn certifications. Districts collect and send data to the Florida Department of Education on the field of certification and exam outcomes.

- Strategies for expanding the number of industry-recognized credentials held by Minnesotans
    - Utilizing industry-recognized credential as an alternative high school diploma: As part of dual credit programming, Virginia has integrated certifications into the general curriculum so students may earn a certification and diploma concurrently. The High School Industry Credentialing Program allowed students to earn qualifying CTE credit approved by the state when receiving technical training in preparation for a certification exam.

Resources:

National Skills Coalition, 2018, Measuring Non-Degree Credential Attainment 50-State Scan https://www.nationalskillscoalition.org/resources/publications/file/Measuring-Non-Degree-Credential-Attainment-50-State-Scan.pdf

National Skills Coalition, 2018, Measuring Non-Degree Credential Attainment 101 Guide for States https://www.nationalskillscoalition.org/resources/publications/file/Measuring-Non-Degree-Credential-Attainment-A-101-Guide-for-States.pdf

Credential Engine (US). (2019). Counting US postsecondary and secondary credentials. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

Employment

Employment is included in this report for three reasons.

First, while educational attainment is the outcome of focus for this report, understanding what's behind our push for increasing attainment is critical. For individuals, earning a college credential means they are more likely to be employed at a job with benefits and receiving a family-sustaining wage. Being employed at a family-sustaining wage leads to healthy families which leads to healthy Minnesota communities. For the state, earning a college credential means having a robust supply of trained workers for the state's employers. With a robust workforce, Minnesota businesses will be more likely to grow and be productive which also contributes to our healthy communities, and ultimately a healthy state.

Secondly, concerns regarding affordability are in part about return on investment and the ability of Minnesota students to repay student loan debt. This affordability frame requires us to understand the employment patterns and wages of our citizens as they move through our education and training systems.

Finally, while we are confronting bias in our educational systems that leads to disparities for students, we must also acknowledge that similar bias exists within our economy. Even after controlling for individual education and training, many Minnesotans from communities of color and indigenous communities are employed at rates far lower than their peers and earn wages that are lower. Ferreting our bias in outcomes after individuals leave education and training is needed for our state to achieve true equity.

METRIC 24: Employment

We chose this metric as one method of measuring outcomes to education and training is to measure the employment of graduates. Tracking the employment of postsecondary graduates has not been consistently done. Historically, employment rates for bachelor's degree recipients have been collected via surveys of graduates using inconsistent sampling methods. While presenting a snapshot of employment rates at a single college, comparing differences in employment rates over time can prove problematic. 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 (and dropouts) can now be tracked over time with greater detail after students have left their education program.

Definition:

> This metric is defined as the number of graduates employed in 4 consecutive quarters starting at quarter 5 after graduation as a share of total graduates with employment data.
>
> Alternative Measure - Percent Employed Full-Time Year Round: The 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 as a share of total graduates with employment data.

This metric can be expanded to include high school graduates or other individuals.

Data Source and Availability for Metric:

Data for this metric comes from the Office of Higher Education and the Minnesota Department of Employment and Economic Development (DEED). Individual information is matched to unemployment insurance wage detail records using personally identifiable information. Resulting records are de-identified before analysis by the state agencies.

What is this metric intended to measure?

This metric measures the extent to which graduates successfully transition to employment after graduation. The alternative measure, percent of graduates employed full-time year round, would be the extent students are achieving full-time employment as this better measures an individual's long term financial stability.

Who has influence over the outcomes of this metric?

This metric is influenced by the academic preparation, college career services, career planning, experiential or work-based learning. 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. Employers also influence this metric through hiring policies and practices, in addition to employer assessment of skills needed.

Disaggregation

When disaggregated, we see gaps in full-time employment rates by race at the sub-baccalaureate level, but less so at the baccalaureate and higher levels as shown in Figure C23 and C24.

Employment status gap: White and Asian graduates were more likely to be employed full-time and consistently for the whole year while other racial minorities were more likely to be employed either part-time or temporarily/seasonally during the year. This difference holds at every education and age level. Although part-time/seasonal work is sometimes a voluntary choice, it is often of lower quality and does not provide the opportunity to negotiate for higher wages. Full-time, year-round employment is of higher quality not only because it more often comes with health care and retirement benefits, but also because it offers more opportunities for career advancement.

Figure C23. Employment and Wage Outcomes of Sub-Baccalaureate Graduates

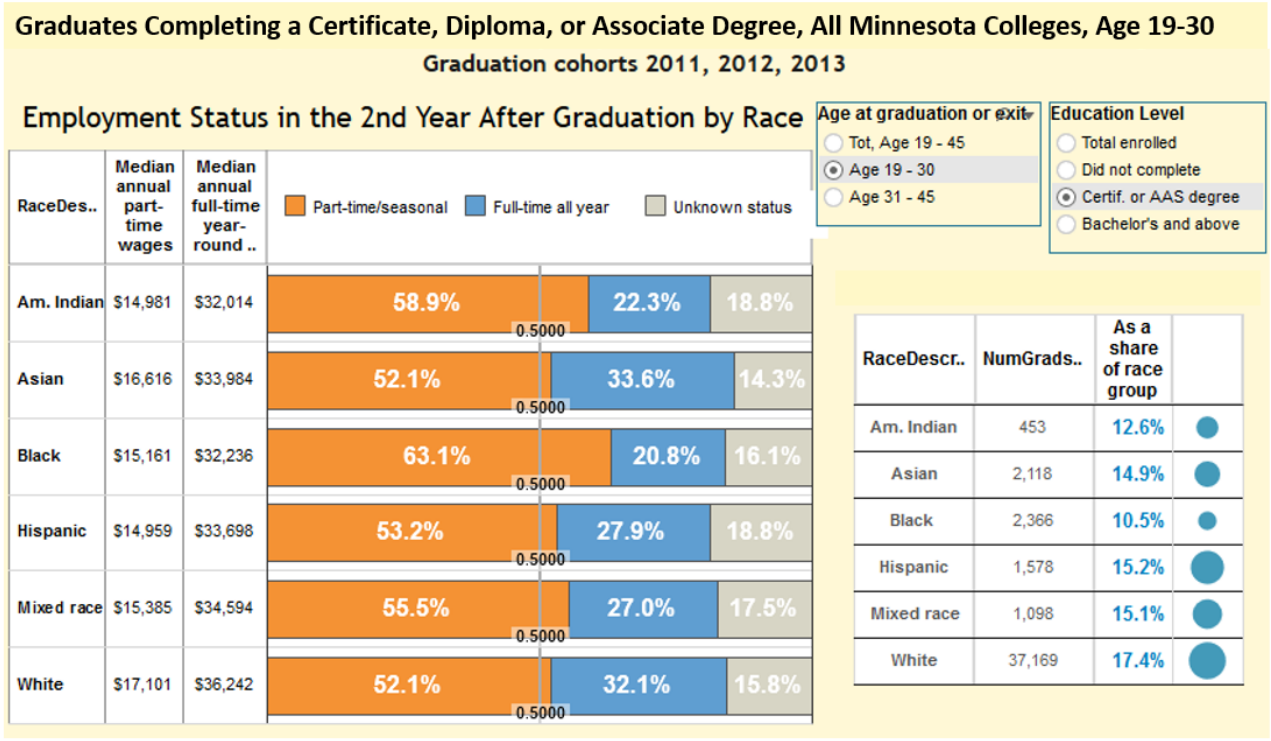
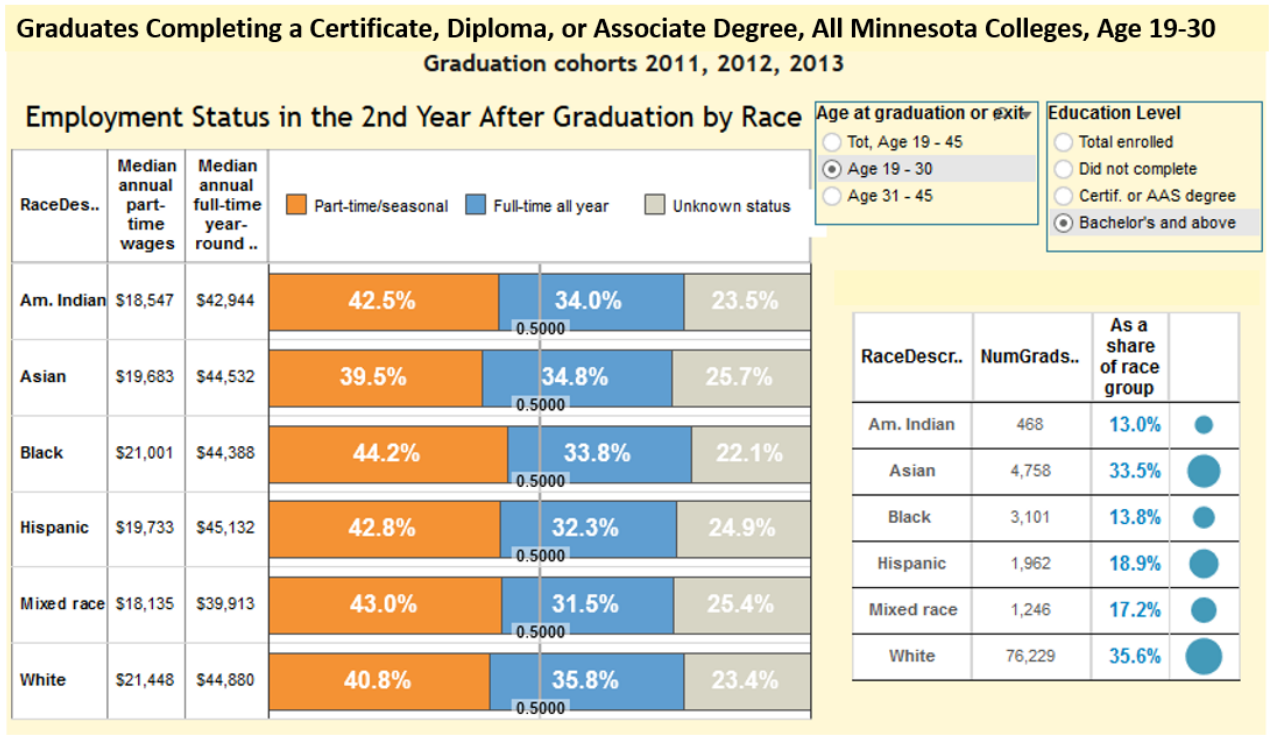


Figure C24. Employment and Wage Outcomes of Baccalaureate and Advanced Credential Graduates



Career advancement opportunity gap: At a similar level of educational attainment and age, graduates from racial minorities are more likely to work in low-wage industries compared to whites. The relatively higher concentration of racial minorities, particularly blacks, in Temp Help and Social Assistance even when they complete Bachelor's and above credentials drives racial wage gaps because of fewer opportunities for skills development and career advancement in these industries. When racial minorities were able to find jobs in high-wage/high skill industries such as Hospitals, Professional and Technical Services, Construction, or Manufacturing, wage disparities shrank substantially. This suggests that initiatives aimed at helping racial minorities break into these industries are key to reducing disparities.

Context for Metric and Usage:

This metric relies on an understanding that employment after graduation provides information about the employment patterns of new graduates and early career wage. College-to-work is a transition and as such the results may not match the individual's lifetime employment patterns and outcomes. Longer-term employment data is required to fully understand the influence education has on lifetime earnings and employment. Employment of recent graduates varies by geographic location, award type and program of study.

Limitations and Caveats:

This metric is not a measure of employment in an occupation related to the student's field of study. Employment also varies significantly with the individual's prior career experience and characteristics. Additional limitations include:

- It cannot be assumed that all graduates not found in the data are unemployed. The 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.
- 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 limitation for graduates in fields which lead to careers that have a national-based job market (University of Minnesota doctoral degrees), as opposed to one centered locally.

- 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.
- Social capital in the form of social networks is known to be important to the employment success of individuals.

Starting strategies

Strategies could include robust economic development programs, continued work to align instructional content with employer needs, quality career services programming for students, and addressing systemic racism within hiring.

Resources:

Graduate Employment Outcomes https://mn.gov/deed/data/data-tools/graduate-employment-outcomes/

Graduate Employment Outcomes – Outcomes by Race https://mn.gov/deed/data/data-tools/graduate-employment-outcomes/race-geo.jsp

DEED, *A Good Job after College: Earning a post-secondary credential helps people find better-paying, higher quality jobs, but race is a factor in labor market outcomes*, https://mn.gov/deed/newscenter/publications/review/july-2016/good-job-after-college.jsp

SLEDS, Entering the Workforce: What happens to high school graduates who don't enroll in college? http://sleds.mn.gov/#HSGraduatesToEmployment/orgId--999999000__groupType--state__ECODEVREGION--FOC_NONE__hsGradEmploymentCOHORTID--2018__p--1

METRIC 24b: Wages

The state's attainment goal assumes positive employment and wage outcomes for individual exiting education and workforce training programs. To ensure and effective system, we should measure the accuracy of that underlying assumption and work to identify areas where positive outcomes are not achieved. On average, graduates working full-time after graduation earn more with each additional level of education (certificate, associate degree, bachelor's degree or graduate degree) compared to those with lower educational attainment (not high school credential, high school credential only). We chose this metric because wage rates can be used as a proxy for financial stability, or positive return on investment from payments for college costs.

Definition:

> This metric is defined as annual wages received by the individual as compared to a cost of living estimates based on income needed to sustain a family in Minnesota by county or region.

Data Source and Availability for Metric:

> This metric would utilize the same data used by the graduates employed year round metric. Data on high school completers from the Minnesota Department of Education, college completers from the Office of Higher Education and the National Student Clearinghouse, and Unemployment Insurance (UI) wage detail records from the Minnesota Department of Employment and Economic Development (DEED). Individual information is matched to unemployment insurance wage detail records using personally identifiable information. Resulting records are de-identified before analysis by the state agencies.
>
> This metric can be expanded to include high school graduates or other individuals.

What is this metric intended to measure?

> This metric measures whether an individual has achieved an earning level allowing them to pay for family-sustaining needs while having good quality of life.

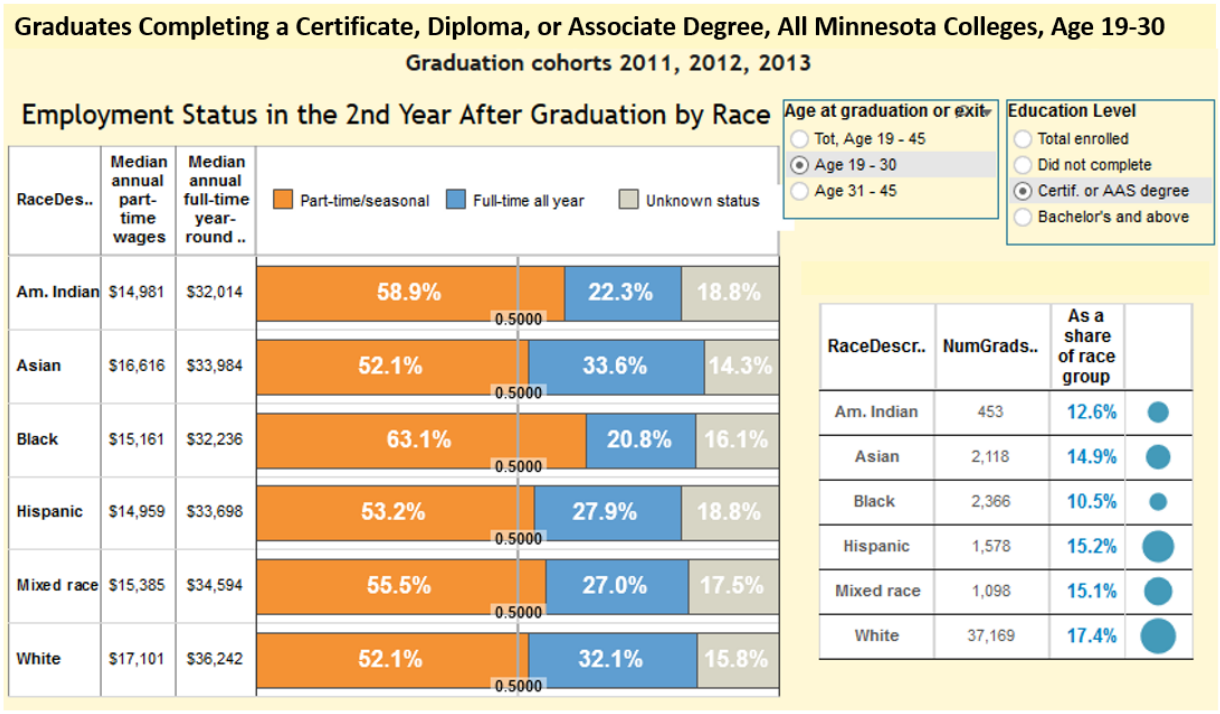
Who has influence over the outcomes of this metric?

> This metric is influenced by the academic preparation, college career services, career planning, experiential or work-based learning. 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. Employers also influence this metric through hiring policies and practices, in addition to employer assessment of skills needed.

Disaggregation

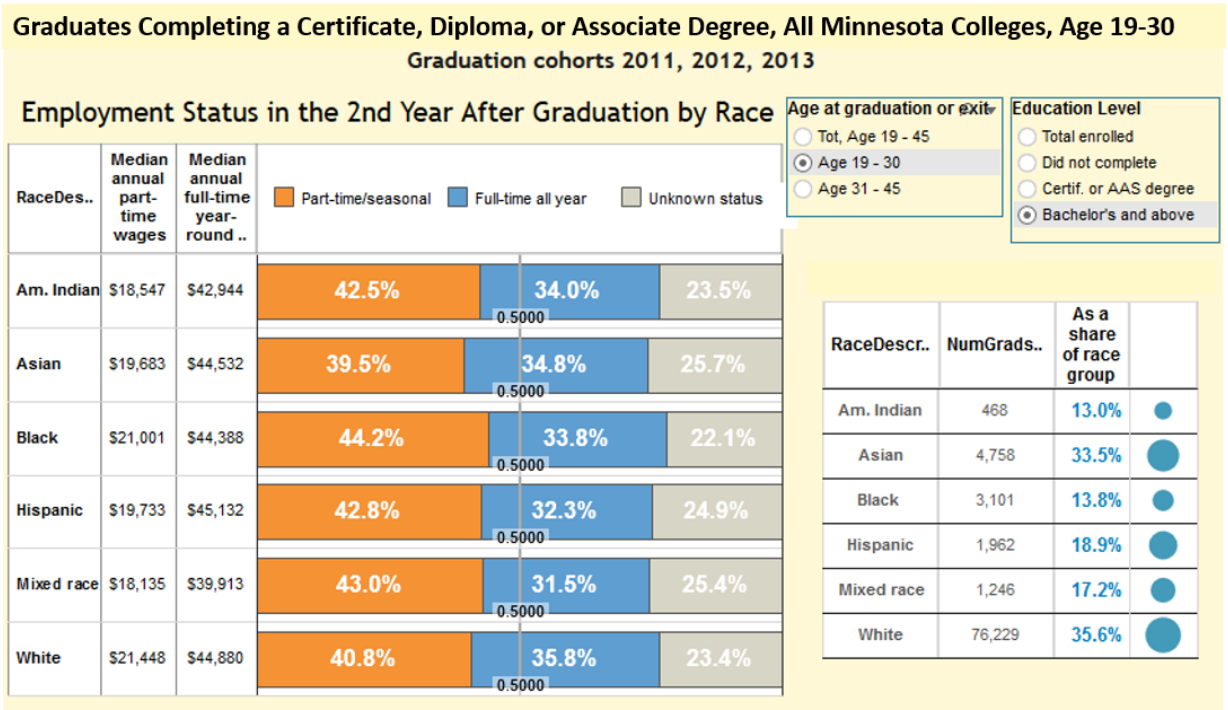
> When disaggregated, we see variation in wages by race at the sub-baccalaureate level, but less so at the baccalaureate and higher levels as shown in Figure C25 and C26.

Figure C25. Employment and Wage Outcomes of Sub-Baccalaureate Graduates



Source: DEED

Figure C26. Employment and Wage Outcomes of Baccalaureate and Advanced Credential Graduates



Source: DEED

Wage gap: Among those employed full-time for the whole year, whites earned more while American Indian graduates earned less than other race groups. Interestingly, the wage gap is reduced among younger completers (age 20-30) who earned a Bachelor's degree and higher, indicating that educational attainment has the effect of leveling the playfield as long as individuals manage to complete college before age 30, land a full-time job, and hold it consistently. Use Employment Status graphic to explore this gap.

Career advancement opportunity gap: At a similar level of educational attainment and age, graduates from racial minorities are more likely to work in low-wage industries compared to whites. The relatively higher concentration of racial minorities, particularly blacks, in Temp Help and Social Assistance even when they complete Bachelor's and above credentials drives racial wage gaps because of fewer opportunities for skills development and career advancement in these industries. When racial minorities were able to find jobs in high-wage/high skill industries such as Hospitals, Professional and Technical Services, Construction, or Manufacturing, wage disparities shrank substantially. This suggests that initiatives aimed at helping racial minorities break into these industries are key to reducing disparities.

Context for Metric and Usage:

Wage rates reflect economic conditions and may be subject to interpretation. Wages received varies significantly with the individual's prior career experience and characteristics, geography, industry, and occupation. This metric isn't intended to measure whether college was financially worth it to the student.

This metric 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.

Similar to the metric above on graduates employed year round, institutions do not have full control on what jobs their graduates will obtain. There is no guarantee that an individual graduate will find a job or be paid wages to compensate for the costs of their training. What we expect is that students, on average, will see a positive return to their investment and use wage rates as a proxy for an average return or as a proxy for financial stability (full-time employment at a family sustaining wage).

Longer-term employment data is required to fully understand the influence education has on lifetime earnings and employment. Employment of recent graduates varies by geographic location, award type and program of study.

Limitations and Caveats:

Wage 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. Wage rates for graduates of institutions near those borders maybe subject to data availability. 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 limitation for graduates in fields which lead to careers that have a national-based job market (University of Minnesota doctoral degrees), as opposed to one centered locally.

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 and to be transparent about the wages earned on average post-completion. Additionally, the state, and institutions have a degree of influence over program costs.

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.

Starting strategies

Strategies could include robust economic development programs, continued work to align instructional content with employer needs, quality career services programming for students, and addressing systemic racism within hiring.

Resources:

Graduate Employment Outcomes https://mn.gov/deed/data/data-tools/graduate-employment-outcomes/

Graduate Employment Outcomes – Outcomes by Race https://mn.gov/deed/data/data-tools/graduate-employment-outcomes/race-geo.jsp

DEED, *A Good Job after College: Earning a post-secondary credential helps people find better-paying, higher quality jobs, but race is a factor in labor market outcomes*, https://mn.gov/deed/newscenter/publications/review/july-2016/good-job-after-college.jsp

SLEDS, Entering the Workforce: What happens to high school graduates who don't enroll in college? http://sleds.mn.gov/#HSGraduatesToEmployment/orgId--999999000__groupType--state__ECODEVREGION--FOC_NONE__hsGradEmploymentCOHORTID--2018__p--1

Appendix D. Current Minnesota Dashboards

The below dashboards were selected as they provide data and measures related to leading indicators of educational attainment (early childhood programs and child demographics, K12 academics and outcomes, college enrollment and completion, workforce and economic indicators).

In addition, the Office of Higher Education does maintain a dashboard on progress in meeting the state's attainment goal (http://www.ohe.state.mn.us/sPages/educ_attain_goal_2025.cfm).

Table D1. Minnesota Dashboards

Name	Description	Includes data disaggregation	Website
DEED Report Cards	Workforce training/development indicators	Yes	https://mn.gov/deed/about/what-we-do/agency-results/perform-measures/report-card/
ECLDS	Early childhood indicators	Yes	http://ecIds.mn.gov
Generation Next	Six key benchmarks to plot critical points along a student's journey, from kindergarten to early career.	Yes	https://gennextmsp.org/data/
Graduate Employment Outcomes	college-to-work indicators	Yes	https://mn.gov/deed/data/data-tools/graduate-employment-outcomes/
MDE Data Center	K-12 data sets associated with state indicators	Yes	https://public.education.mn.gov/MDEAnalytics/Data.jsp
Minnesota Compass	Social indicators project that measures progress in our state and its communities.	Yes	https://www.mncompass.org/
MN Dashboard	40 indicators of the state's well-being	No	https://mn.gov/mmb/mn-dashboard/about/
MN Report Card	K-12 indicators	Yes	https://rc.education.mn.gov

Name	Description	Includes data disaggregation	Website
MN Student Survey	Survey of student behavior for current priority topics, includes social-emotional learning.	Yes	https://public.education.mn.gov/MDEAnalytics/DataTopic.jsp?TOPICID=242
SLEDS	High school-to-college, College enrollment & completion indicators	Yes	http://sleds.mn.gov
Parent Aware MN	Data on quality child care and early education programs.	No	https://www.parentaware.org/#/
Lumina Foundation Stronger Nation	Educational attainment indicators (mostly census data)	Yes	http://strongernation.luminafoundation.org/report/2020
NAEP State Profile	Data for state/jurisdiction performance on the National Assessment of Educational Progress (NAEP) assessments	Yes	https://www.nationsreportcard.gov/profiles/stateprofile?chort=1&sub=MAT&sj=&sfj=NP&st=MN&year=2019R3
State of Preschool (NIEER)	Monitors and evaluates national and state progress toward early educational excellence	No	http://nieer.org/state-preschool-yearbooks/2018-2#profiles

Appendix E. Point-In-Time versus Longitudinal Cohort Data

Given the importance of the goal set by the P-20 Education Partnership and the interconnectedness of member organizations, their services, their missions, and the populations they serve, it is important to consider the data model to be developed.

The data featured in this report reflect point-in-time data or a snapshot of one outcome for an individual, group, or organization at a given point-in-time (e.g. reading proficiency, 3rd grade, 2019). Historically, point-in-time data was what was available to state agencies and organization doing compliance reporting. In order to determine causality, more advanced statistical models would be developed and historical data would be used (e.g., who graduated from college – let's look at their high school and college records). Ideally a researcher would design a study using advanced statistical models with some awareness of the variables of interest, both dependent and independent. For state agencies and educational organizations needing to respond to stakeholder inquiries, proactively designing a study using advanced statistical models is a rare, though celebrated, occurrence.

One option for the members to consider is the use of longitudinal cohort data. For example, we can follow 9th graders in 2013 into subsequent grades to see what happens. Do they go to college? Do the work? Longitudinal research allows you to look at variables over an extended period of time and examine the temporal sequence between experiences and outcomes. Longitudinal methods are particularly useful when studying development and lifespan issues. Researchers can look at how certain things may change at different points in life and explore some of the reasons why these developmental shifts take place. The value-add is that if a student scores poorly on at one time point, we can follow to see if additional interventions or experiences resulted in better outcomes at a later time. For a 9th grader dropping out in 2013, do they enroll in ABE? Do they enroll in college and complete a degree? What are the characteristics of the pathways and choices made between time point A (9th grade) and time point B (today) that influenced their success? Furthermore, the pathway in question likely crossed multiple systems (K-12, ABE, college, work) and could inform not only the work of a single system but the intersection of work between or across the systems.

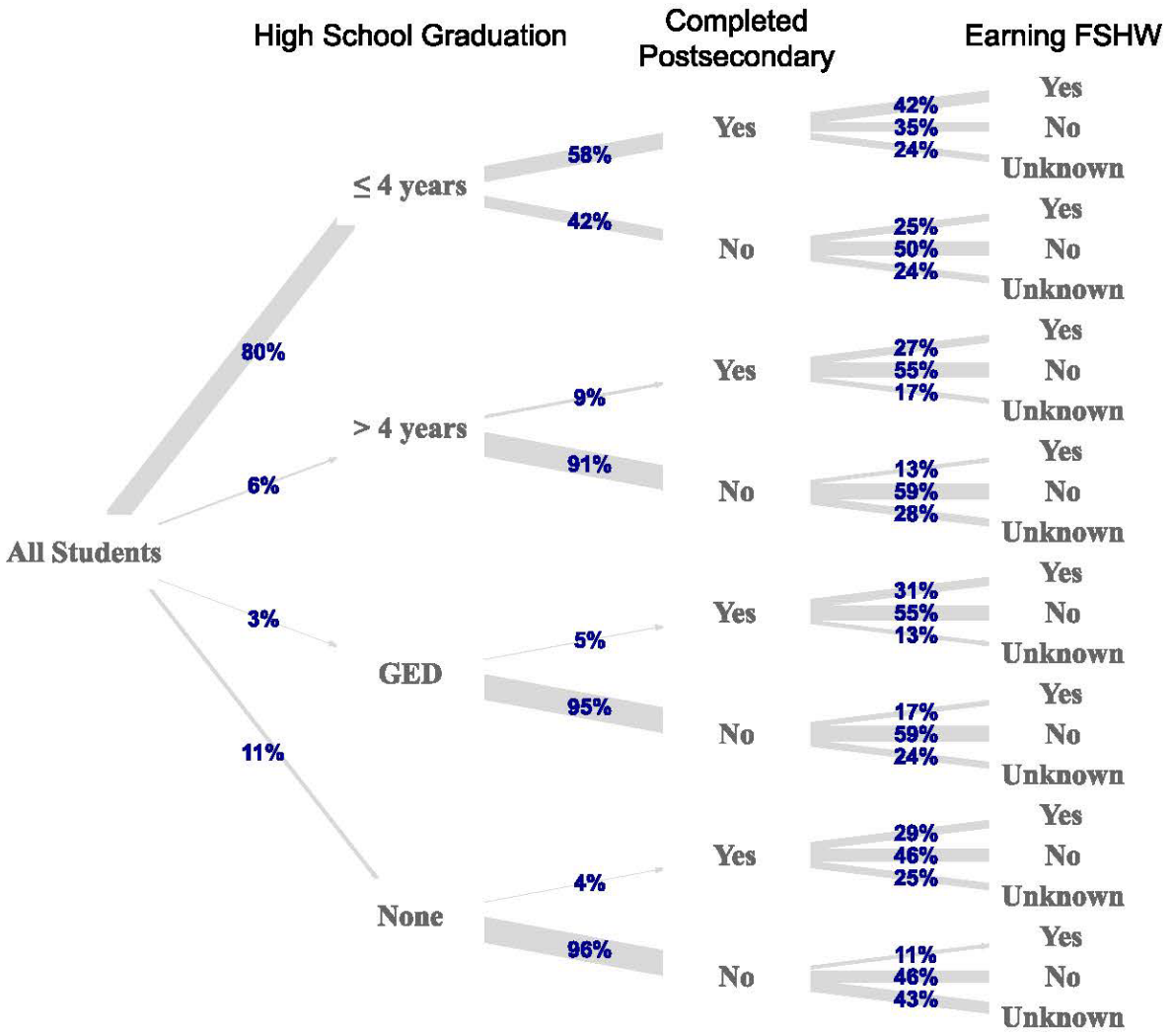
SLEDS and ECLDS make longitudinal data accessible for members to use in understanding pathways. The Center for Applied Research and Educational Improvement at the University of Minnesota recently presented a results of a study examining the pathways individuals take between 9th grade (2008) and age 27 (2018), examining the milestones most impactful in determining if the individual was earning a family-sustaining wage at age 27. Figure D1 and Figure D2 present descriptive analyses of how milestones across systems lead to earning a family sustaining wage.

The examples presented in the report demonstrate the power of presenting outcomes across systems. In lieu of being theoretical, we can use historical longitudinal data to show the movement of Minnesotans across systems, and delve into areas where students "beat the odds" to find out why.

In Figure E1, researchers examine the question "What pathways did individuals take to earning a FSHW?" They first looked at all students who entered Grade 9 in 2008, examining how their wage

outcomes 10 years after Grade 9 (2018) differed by whether or not they completed high school or postsecondary education. For example, of the individuals who graduated high school in 4 years or less, and who completed postsecondary, 42% were earning a FSHW in 2018; conversely, of those individuals who did not graduate from high school or receive a GED (i.e., no HS equivalency), and who did not complete postsecondary, only 11% were earning a FSHW in 2018 (Brown et al., 2020).

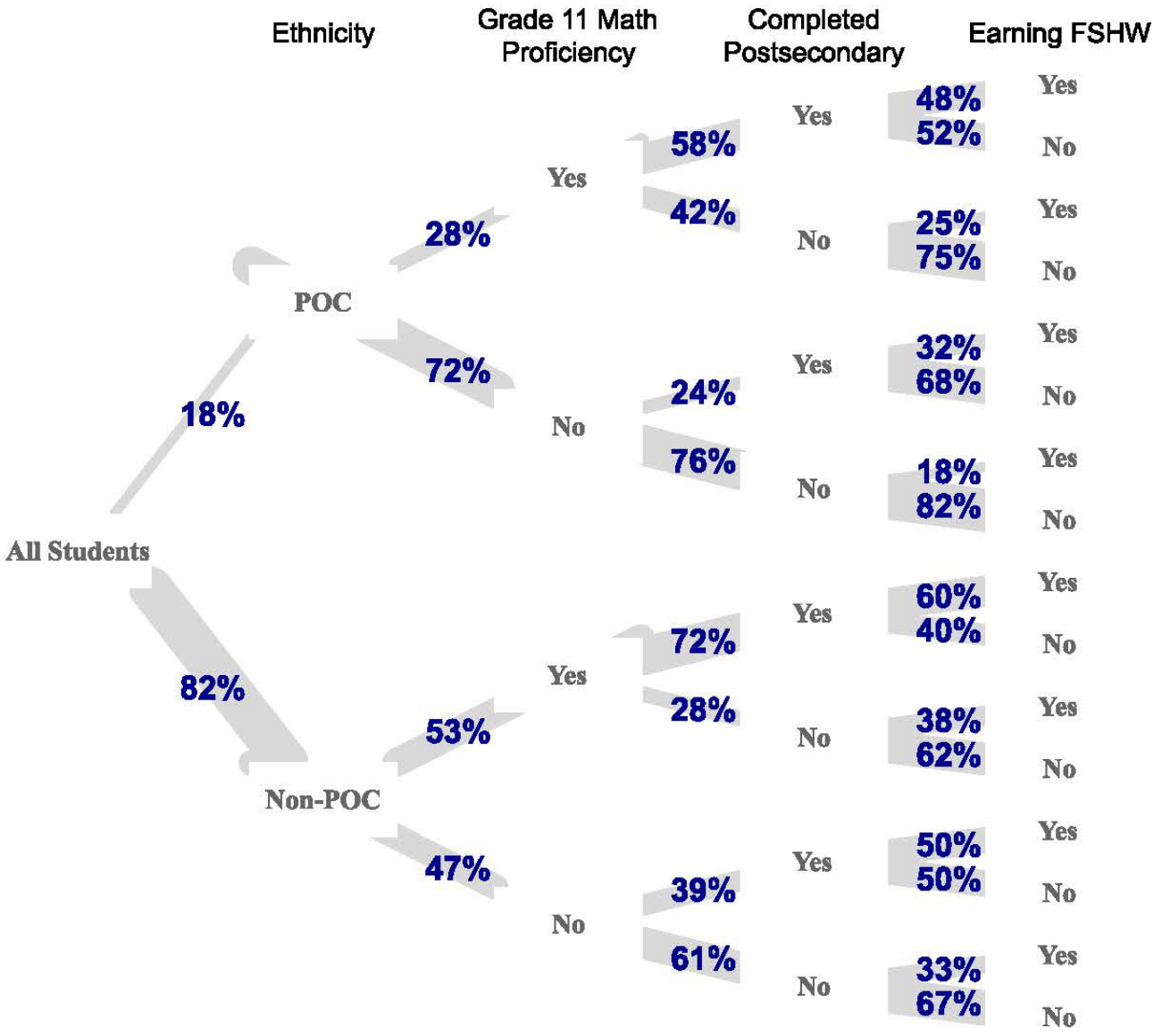
Figure E1. Overall Pathways to a Family-Sustaining Hourly Wage, by High School Graduation and Postsecondary Completion



Source: Brown, E., Fields, J., & Halloran, C. (2020). Trends, transitions, and subgroup differences on the pathway to a family-sustaining hourly wage for Minnesota students. Center for Applied Research and Educational Improvement, College of Education and Human Development, University of Minnesota. Available from SLEDS

For individuals of color in the 2008 cohort, math proficiency and postsecondary completion resulted in the highest rates of individual earning a family sustaining hourly wage with 48% of POC individuals passing both of these milestones earning a FSHW 10 years after entering Grade 9, as compared to 60% of non-POC individuals (Figure E2).

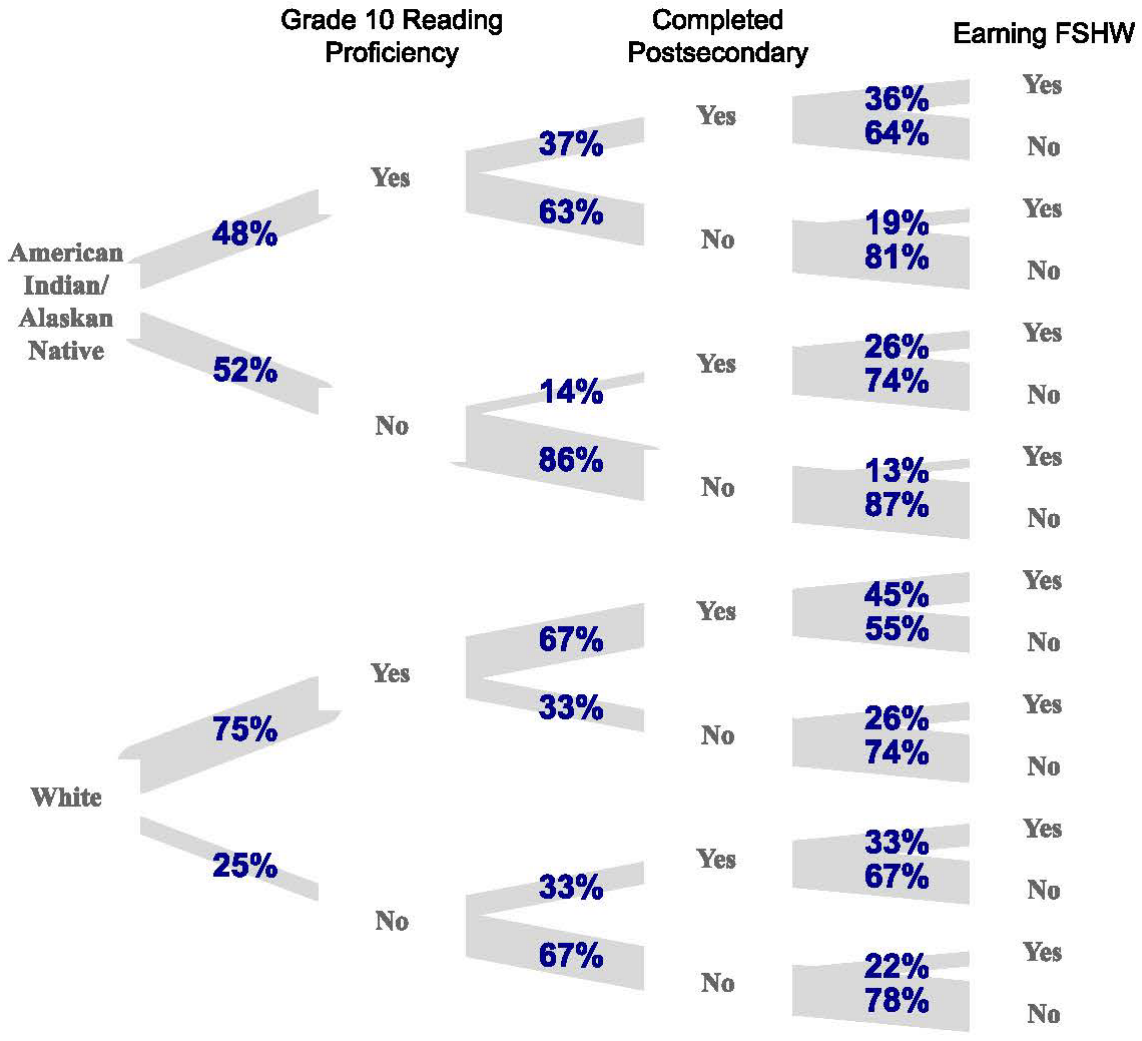
Figure E2. Pathways to a Family-Sustaining Hourly Wage for the 2008 Cohort, by People of Color vs. non-People of Color, Math Proficiency, and Postsecondary Completion



Source: Brown, E., Fields, J., & Halloran, C. (2020). Trends, transitions, and subgroup differences on the pathway to a family-sustaining hourly wage for Minnesota students. Center for Applied Research and Educational Improvement, College of Education and Human Development, University of Minnesota. Available from SLEDS

Researchers also examined pathway differences by race/ethnicity. This required researchers to aggregate data across five cohorts (2004–2008) in order to investigate whether any patterns emerged. Although not displayed, results showed that for individuals who were Asian/Pacific Islander, Black, or Hispanic, the top milestone pair was math proficiency and postsecondary completion. However, American Indian/Alaskan Native individuals showed a different pattern, with the top milestone pair being reading proficiency and postsecondary completion (Figure E3). Note that the number of American Indian/ Alaskan Native individuals in 2004–2008 was relatively small (n=3,098); thus, these results should be interpreted with some caution.

Figure E3. Pathways to a Family-Sustaining Hourly Wage for the 2008 Cohort, by American Indian/Alaskan Native vs. White, Reading Proficiency, and Postsecondary Completion



Source: Brown, E., Fields, J., & Halloran, C. (2020). Trends, transitions, and subgroup differences on the pathway to a family-sustaining hourly wage for Minnesota students. Center for Applied Research and Educational Improvement, College of Education and Human Development, University of Minnesota. Available from SLEDS