



RECENT HIGH SCHOOL GRADUATES
AND DEVELOPMENT COURSES

GETTING'17
PREPARED

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About the Minnesota Office of Higher Education

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

The Minnesota State Grant Program is the largest financial aid program administered by the Office of Higher Education, awarding more than \$198 million in need-based grants to Minnesota residents attending accredited institutions in Minnesota. The agency oversees tuition reciprocity programs, a student loan program, Minnesota's 529 College Savings Plan, licensing and early college awareness programs for youth.

About Minnesota SLEDS

Minnesota has developed the Minnesota Statewide Longitudinal Education Data System (SLEDS) matching student data from pre- kindergarten through completion of postsecondary education and into the workforce. SLEDS facilitates analysis to address a range of educational programmatic and delivery methods to gauge their effectiveness, and ease the design of targeted improvement strategies that help students.

SLEDS brings together data from education and workforce to:

- Identify the most viable pathways for individuals in achieving successful outcomes in education and work;
- Inform decisions to support and improve education and workforce policy and practice, and
- Assist in creating a seamless education and workforce system for all Minnesotans.

The Minnesota P-20 Education Partnership governs the SLEDS system. The project is managed jointly by the Minnesota Office of Higher Education (OHE), Minnesota Departments of Education (MDE), and Employment and Economic Development (DEED).

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Executive Summary

Getting Prepared 2017 examines Minnesota public high school graduates from the classes of 2008-2015 who enrolled in postsecondary education and those enrolled in developmental education. This report provides insight into the academic readiness of Minnesota public high school graduates. 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.

Getting Prepared Data

Getting Prepared 2017 fulfills the legislative mandate (Minnesota Statute 13.32, subdivisions 3 and 6) to provide summary information about Minnesota public high school graduates who enrolled in developmental courses at Minnesota postsecondary institutions within two years of high school graduation. The report utilizes analysis resulting 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. The term “college” is used to reference any type of postsecondary institution offering academic programs or vocational training.

Defining Developmental Education

In this report, “developmental education” refers to programs offered by postsecondary institutions to prepare students for success in college-level work. “Remedial instruction,” the term used in Minnesota Statutes 13.32, can imply courses that repeat material taught earlier that the student did not learn adequately the first time. “Developmental education” is a broader term that encompasses pre-college-level education and other academic support services that the student may benefit from for any reason.

Identifying Students Who Need Developmental Education

The process by which students are placed into developmental education is a 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 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 across all colleges and universities 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.

Innovations in Developmental Education

Many Minnesota colleges have implemented innovations in developmental education to increase student success (e.g. course completion, retention and program completion). Current innovations in developmental education include accelerated programs, contextualized instruction, math pathways and other models. Each of these areas of innovation is described in detail in the full report including a list of Minnesota State institutions implementing each type of innovation is included.

- **Acceleration models** are designed to increase students' progress through developmental education over a shorter period. A number of different acceleration models exist, including supplemental instruction, integrated courses, fast track courses, single sequence developmental course, and competency based units.
- **Contextualized instruction models** enhances student learning of developmental education content through integrating basic skill instruction within a particular subject or linked with a college-level course. Some campuses with technical programs also offer contextualized math courses within a specific program's curriculum that prepares students with the applied math skills needed in that particular field or industry.
- **Math pathways** allow for students with various degree plans to take only the required developmental education math courses that are needed for particular pathways. Additionally, many campuses with technical programs may have program math requirements that do not require college level mathematics for that particular industry and associated credential.
- **Other curricular models** and programs have been implemented by many Minnesota postsecondary institutions to increase student success in developmental education, such as student support services (tutoring, advising, and early alert systems), curricular redesign (flipped classrooms, required labs, and on-line modules) and targeted programming (summer boot camps, bridge programs, partnerships with secondary schools, and partnerships with Adult Basic Education).

Findings: What the Data Tells Us

Overall, Minnesota does well in moving students from public high school to college (77% of 2014 graduates enrolled in college within 2 years of high school graduation). However, gaps in college enrollment exist for students of color and lower income students.

Getting Prepared 2017 provides policymakers one measure of college readiness — enrollment in developmental education. Twenty-four percent of 2014 public high school graduates enrolled in one or more developmental courses within two years of graduating high school. Overall developmental education rates for recent high school graduates declined between 2008 and 2014. Almost all graduates enrolling in developmental education (98%) enrolled at Minnesota State Colleges and Universities. Disparities in enrollment in developmental education also exist for students of color, non-English speakers and lower income students.

College Enrollment

Seventy-seven percent of 2014 public high school graduates enrolled in college within two years of graduation. College enrollment rates for key populations of 2014 high school graduates lagged those of peers.

- 79% for White graduates
- 78% for Asian graduates
- 71% for Black or African American graduates
- 63% for Hispanic or Latino graduates
- 54% for American Indian graduates
- 85% of graduates not enrolled in free or reduced price lunch in high school
- 63% of graduates enrolled in free or reduced price lunch in high school

Developmental Education

Twenty-four percent of 2014 public high school graduates enrolled in one or more developmental courses within two years of graduating high school.

The percentage of high school graduates who enrolled in developmental education within two years of graduating has decreased from 30 percent (2008) to 24 percent (2014).

State rates mask differences in developmental education course taking by college sector.

- Among graduates enrolled in developmental education:
- 84% enrolled at Minnesota public two-year colleges
- 14% enrolled at Minnesota State Universities
- 1% each enrolled at the University of Minnesota, private for-profit colleges, and private not-for-profit colleges in Minnesota

The 2014 graduates of color enrolled in developmental education at higher rates, within two years of graduating, than White graduates did.

- 49% for Black or African American graduates
- 40% for Hispanic or Latino graduates
- 30% for American Indian/Alaskan Native graduates

- 36% for Asian graduates
- 19% for White graduates

Graduates whose primary home language was not English, or who were identified as having limited English proficiency, enrolled in developmental education at rates higher than English speakers did.

- 74% of graduates identified as Limited English Proficient
- 56% of graduates speaking Somali at home
- 47% of graduates speaking Hmong at home
- 45% of graduates speaking Spanish at home
- 21% of graduates speaking English at home

The 2014 graduates enrolled in free or reduced-price lunch showed higher rates of developmental education within two years of graduating than other graduates.

- 36% for graduates enrolled in free or reduced price lunch in high school
- 17% for graduates not enrolled in free or reduced price lunch in high school

Testing

Public high school graduates meeting the standards on statewide accountability tests have higher college enrollment rates and lower developmental education rates as compared to students not meeting the standards.

Math

- Grade 11 students meeting math standards: 9% enrolled in developmental education
- Grade 11 students not meeting math standards: 44% enrolled in developmental education

Reading

- Grade 10 students meeting reading standards: 17% enrolled in developmental education
- Grade 10 students not meeting standards: 55% enrolled in developmental education

Student Outcomes

Persistence rates of students in developmental education varied by sector of enrollment.

- For the class of 2014, 69% of developmental education enrollees persisted in college at Minnesota State Colleges as compared to 73% of non-developmental education peers.

- At Minnesota State Universities, 91% of developmental education enrollees persisted in college as compared to 90% of non-developmental education peers.

However, students in developmental courses graduated from college at rates lower than peers who had not enroll in developmental education.

- The class of 2009 developmental education enrollees had six-year completion rates ranging from 37% at private for-profit institutions to 66% at the Minnesota State Universities as compared to non-developmental education peers (56%-85%).

Data by demographic subgroup, school type can be found in the full report and associated tables. Data by individual public high school can be found in Appendix A (college enrollment) and Appendix B (developmental course taking).

Introduction

Nationally, Minnesota ranks high in high school graduation rates and college attainment, but there are significant disparities for students of color and low-income students. For Minnesota to remain globally competitive, our education and workforce systems need to ensure every high school student is on track to pursue the education necessary for careers of the future. The transition from high school to college can be more difficult for some students than others. A focus on the academic readiness for college will improve student outcomes. One current measure of readiness is enrollment in developmental education courses upon entry into college. Getting Prepared 2017 examines Minnesota public high school graduates from the classes of 2008-2015 who enrolled in postsecondary education and those enrolled in developmental education, this report provides insight into the current academic readiness of Minnesota public high school graduates. 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.

Defining Developmental Education

In this report, “developmental education” is a term used to refer to programs offered by postsecondary institutions to prepare students for success in college-level work. “Remedial instruction,” the term used in Minnesota Statutes 13.32, can imply courses that repeat material taught earlier that the student did not learn adequately the first time. For many educators, “developmental education” is a broader term that encompasses pre-college-level education and other academic support services that the student may benefit from for any reason.

Assessing students for academic readiness occurs as part of the admission process for many colleges. For those colleges with open admissions, colleges review standardized test scores, state exams, high school transcripts, placement test results, and other information to determine whether a student requires developmental education for their intended program of study. 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. The traditional developmental education sequence is shown in Figure 1 on the next page.

Getting Prepared Data

The Minnesota Statewide Longitudinal Education Data System (SLEDS), managed jointly by the Minnesota Office of Higher Education (OHE), Minnesota Departments of Education (MDE) and Employment and Economic Development (DEED), provided data for this report.

High school enrollment and graduate data included 470,000 public high school graduates from 2008 to 2015. Graduates defined as students with a status end code of “8” or “9” in the specified year is not comparable to graduation rate cohort data commonly used by the Minnesota Department of Education (MDE). For example, students graduating from high school in 2015 may be members of different MDE graduation rate cohorts (2013, 2014 or 2015) depending on whether they took 4, 5 or 6 years to graduate.

Additional college enrollment and graduate data can be found in the annexed tables.

Figure 1. The Traditional Developmental Education Sequence

- 1 Preparation**
Past experiences, most notably during high school and GED programs, shape how prepared are students for college.
- 2 Assessment**
Students take a brief standardized exam to measure their college readiness in core subject areas.
- 3 Placement**
Assessment results determine placement in developmental education, typically developmental English, math, writing or some combination of all three.
- 4 Remediation**
Course content improves grasp of fundamental concepts and skills for college coursework.
- 5 College-ready**
Completion of developmental coursework demonstrates the students is ready for college.
- 6 College-credit**
Students take college credits and ultimate complete the requirements for a postsecondary degree.

College enrollment data included 1 million fall term records from the Minnesota Office of Higher Education and 2.1 million enrollment records from the National Student Clearinghouse for all available years. College students are classified based on their first college of enrollment. Analysis was focused on the first two years after high school graduation. Unless otherwise indicated, college enrollment data refers to enrollment in both public and private colleges.

Data is limited to fall term data. Beginning with the high school graduates of 2016, data will be reported for all terms (fall, spring and summer) and disaggregated by subject area (math, reading, English, and other).

Figure source: King, J. et al. (2017).

Background on Developmental Education

Each year, millions of students enroll in college. However, some of these students are underprepared for college-level coursework. Among undergraduates in the United States, about one-third of students reported that they enrolled in at least one developmental course (U.S. Department of Education, 2014). For these students, developmental or remedial education can provide a pathway to college-level work regardless of prior academic experience or circumstances. The need to enroll in developmental courses may delay completion of their certificate or degree or negatively affect the motivation to stay in college.

Approximately \$4 billion annually is invested nationally in services that help underprepared students (Scott-Clayton, & Rodriguez, 2013). However, of community college students who enroll in developmental courses, only 28% earn a degree within eight years compared to 43% of those who do not enroll in developmental education (Attewell, Lavin, Domina, & Levey, 2006). Many factors can contribute to this low rate of success. For example, assessment and placement practices, lack of student supports and outer influences, such as the students' family and work obligations.

Many colleges are implementing innovations that are changing the landscape of developmental education and creating new opportunities for students. Mixed-method assessment practices, intrusive advising, use of financial incentives, co-requisite courses, and acceleration programs are transforming developmental education and its potential for creating equitable, positive experiences for students who need extra support when starting college. National trends in developmental education reflect the experiences of many of Minnesota's college students.

Defining Developmental Education

In this report, "developmental education" refers to credit-bearing courses offered by postsecondary institutions to prepare students for success in college-level work. Assessing students for academic readiness occurs as part of the admission process for many colleges. For those colleges with open admissions, colleges review standardized test scores, state exams, high school transcripts, placement test results, and other information to determine whether a student requires developmental education for their intended program of study. 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.

Students are assessed as needing to enroll in developmental courses for a variety of reasons:

- High school coursework did not include specific subject matter required for the college major or program of study.
- Students completed the required coursework in high school but were not able to demonstrate the necessary skills on placement exams required by the college or university.
- Students may have delayed their college enrollment and now need to refresh or update their skills.
- Students for whom their first language is not English may need to bolster their reading and writing skills.

Developmental coursework is intended to help students develop the skills and knowledge that will be required in college-level courses. College-level mathematics generally requires skills in intermediate algebra. College-level English requires the ability to make clear arguments. College-level reading involves the ability to read and interpret text, identify main points, tone, purpose and inferences to discuss the author's argument (Conley, 2007). In addition to course work, other academic supports may be provided to help students, including: summer bridge programs, peer tutoring programs, cohort-based learning communities, or advising.

College Mission and Developmental Education Programs

All public colleges and universities in Minnesota enroll students who need developmental education. However, a college's mission is closely intertwined with the delivery of and options available for developmental education. Open-access public colleges serve students with a broad variety of experiences and circumstances regardless of academic or social-emotional readiness. The core mission of these institutions creates a demand for coursework that meets students at the various levels of their college preparedness.

The type and availability of offerings of developmental education often reflect a college's student demographics and selectivity. Nationally, 80 percent of public colleges and 98 percent of community colleges offer developmental courses (Bettinger & Long, 2006).

The types of developmental course offerings vary across college types.

- Minnesota public two-year colleges have open admission policies and admit all students with a high school diploma. Open admission policies attracts students with a broad range of preparedness, including students in need of developmental reading, writing and mathematics courses. Minnesota public two-year colleges offer an extensive array of developmental courses and academic support services to meet the needs of a broader base of students.
- All Minnesota public colleges offer at least one developmental mathematics, reading or writing course. Minnesota State Colleges and Universities offer developmental courses in all subjects: math, reading, writing, English as a Second Language and study skills. The colleges may offer up to three levels of developmental math courses ranging from pre-algebra to intermediate algebra.
- Four-year colleges, both public and private not-for-profit, generally have higher admission standards and expect prospective applicants to enter directly into college-level work. This expectation results in fewer developmental course offerings. University of Minnesota campuses offer only one level of developmental education in a mathematics course. One campus offers a course on study skills

Changes in how developmental education is structured makes it difficult to track enrollment in developmental education over time. Bridge programs easing the transition from high school to college are typically not credit bearing courses and would not be counted in Minnesota's current measures of developmental education. Minnesota will need to adapt its definition of college readiness to meet this need. The 2017 Legislature required that Minnesota State prepare a plan to reform developmental education. Such plan would include a system-wide, multiple measures placement plan, uniform cut scores for student placement, other identified system policy changes, accelerated pathways in mathematics, reading, and composition, a comprehensive examination of the

cost structure of developmental education, and identified best practices and targeted support strategies to be implemented by the start of the 2020-2021 academic term.

Identifying Students Who Need Developmental Education

The process by which students are placed into developmental education is a critical policy issue for understanding developmental education. Current research supports a shift to a holistic review of student tests and high school transcripts. For example, Belfield and Crosta (2012) highlighted severe error rates for placement tests, resulting in almost a third of students incorrectly assigned to developmental education. The research found a weak correlation between placement test scores and college grade point average (Belfield & Crosta, 2012).

Postsecondary institutions can also have varying thresholds for college-readiness. Such variation can result in a student being required to enroll in developmental education courses at one institution, but not at a different institution. Nationally, only twelve states have standardized cut-scores statewide (Fields & Parsad, 2012). Minnesota adopted college-level cut scores system wide for Minnesota State Colleges and Universities in 2006.

Methods Used by Minnesota Postsecondary Institutions

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 GPA, high school courses and grades, or non-cognitive assessments to determine a student's readiness for college-level coursework.

- **Minnesota State Colleges and Universities** 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 across all colleges and universities by 2020-2021 as required by the Minnesota Legislature.
- **The University of Minnesota** requires students to take placement exams in mathematics, regardless of their scores for ACT, Advanced Placement or International Baccalaureate tests (University of Minnesota, 2017, <http://placement.umn.edu/>). Additionally, colleges within the University of Minnesota may require placement exams in chemistry or second language proficiency before initial registration. The placement score, high school transcript and other measures are used to advise students on their initial mathematics course placement.
- Among **Minnesota private non-profit and for-profit colleges**, developmental education policies vary by college.

Institutional Spotlight: Century College

Developmental education reform efforts at Century College formally began in 2014 though steps had been taken prior to 2014 to change how the college delivers this service to students. Reforms focused on two main strategies: placing students more accurately, and delivering the curriculum they need to achieve their goals.

The college changed its placement method to using test scores and information about the student's last math class. The new method prevented students from being placed into developmental math due to a single bad test day. Mathematics faculty also created a one-course prerequisite to college statistics providing the needed algebra concepts required, but not the entire algebra sequence. This change reduced requirements for students by five credits allowing them to save time and money. Because of these changes, 55% of students who would have previously placed into that class passed the next class in the sequence.

English faculty developed a co-requisite model pairing college composition with an additional support class with the same instructor. Similarly, Reading faculty replaced the two-semester sequence of developmental courses with a single course. Beginning in summer 2018, an academic literacy course combining developmental reading and writing for the lowest readers will be offered. Enrolled students then enroll in the co-requisite English composition course. Students testing one level below college composition can take the co-requisite integrated reading and writing class with college composition the first semester. Students take an English Placement exam in mid-semester that allows them to skip the co-requisite class and go directly into Comp I. In fall 2017, 34% of 330 enrolled students qualified to skip the support course, eliminating four credits of developmental coursework. In 2018, Century College will implement the integrated reading and writing sequence for all students.

Innovations in Developmental Education

Many of Minnesota's colleges have implemented innovations in developmental education to increase student success (e.g. course completion, retention and program completion). These innovations vary from institution to institution as programs are customized to meet the needs of students within their local context. Current innovations in developmental education include accelerated programs, contextualized instruction, math pathways and other models. Each of these areas of innovation is described below. As Minnesota State Colleges and Universities enroll more than 98% of recent high school graduates in developmental education, a list of Minnesota State institutions implementing each type of innovation is included.

Acceleration programs

Minnesota State Colleges and Universities have implemented various accelerated programs. Acceleration models are designed to increase students' progress through developmental education over a shorter period. These are supplemental instruction, integrated courses, fast-track courses, single-sequence developmental course, and competency-based units.

In the Accelerated Learning Program model with supplemental academic instruction, developmental learners enroll in college-level courses immediately and utilize supplemental supports to support their success. Supplemental support can come in the form of mandatory companion classes, lab sessions, integrated tutorial support, and/or additional class sessions. Colleges include:

- Anoka-Ramsey Community College
- Century College
- Inver Hills Community College
- Minneapolis Community and Technical College
- Minnesota State Community and Technical College
- Normandale Community College
- North Hennepin Community College
- Rainy River Community College
- Rochester Community and Technical College
- St. Cloud Technical and Community College

Colleges are also offering an integrated reading and writing course(s). By merging the reading and writing curriculum, students can address their learning needs for both content areas through one developmental education course appropriate for their skill level. Colleges include:

- Central Lakes College
- Century College
- Hibbing Community College
- Inver Hills Community College
- Lake Superior College
- Minnesota State College Southeast
- Minnesota State Community and Technical College
- Normandale Community College
- Northland Community and Technical College
- Northwest Technical College
- Rainy River Community College
- Ridgewater College

Colleges are implementing compressed offerings or fast-track courses in which students can complete two developmental education sequence courses in one semester. Courses are scheduled, for example, for longer class periods in eight-week sessions. Colleges include:

- Anoka Technical College
- Fond du Lac Tribal and Community College
- Hennepin Technical College
- Lake Superior College
- Mesabi Range College
- Minneapolis Community and Technical College
- Minnesota State Community and Technical College
- Minnesota West Community and Technical College
- Normandale Community College
- Northland Community and Technical College
- Riverland Community College

- Saint Paul College
- St. Cloud Technical and Community College
- Vermilion Community College

Colleges are offering a single sequence developmental course that enables students to complete their developmental education requirement in particular subject areas within one semester. To ensure that the institution can meet the broad range of learning needs of the students, some campuses offer one-semester courses with varying credit options based on students' academic readiness. Colleges include:

- Alexandria Technical and Community College
- Century College
- Dakota County Technical College
- Fond du Lac Tribal and Community College
- Lake Superior College
- Normandale Community College
- North Hennepin Community College
- Minneapolis Community and Technical College
- Minnesota State Community and Technical College
- Minnesota State University, Mankato
- Minnesota State University Moorhead
- Southwest Minnesota State University
- St. Cloud Technical and Community College
- Winona State University

Colleges are using a model that breaks down a semester-long course into smaller, competency- based units that allow students to spend time addressing specific skill deficits. These institutions are implementing the Assessment and Learning in Knowledge Space (ALEKS) program, a web- based, artificial intelligent assessment and learning system that diagnoses learning gaps for students and provides tailored instructional materials that addresses the individual learning needs of students to master curriculum topics. Some institutions are also using other types of technology- enhanced curricula in mathematics. Colleges include:

- Anoka Technical College

- Dakota County Technical College
- Lake Superior College
- Minneapolis Community and Technical College
- Normandale Community College
- Vermilion Community College

Contextualized instruction models

Contextualized instruction models enhances student learning of developmental education content through integrating basic skill instruction within a particular subject or linked with a college-level course. Some campuses with technical programs also offer contextualized math courses within a specific program’s curriculum that prepares students with the applied math skills needed in that particular field or industry.

Colleges are implementing various forms of paired courses and/or learning communities, which involves coupling courses with similar requirements (e.g. literature course and a writing course; developmental reading course and general education course). This type of pairing allows students to learn within a community of learners, be a part of integrated learning environments, and apply knowledge and learning across disciplines. Colleges include:

- Anoka-Ramsey Community College
- Central Lakes College
- Century College
- Dakota County Technical College
- Fond du Lac Tribal and Community College
- Hibbing Community College
- Itasca Community College
- Mesabi Range College
- Minnesota State University, Mankato
- Normandale Community College
- North Hennepin Community College
- Rainy River Community College
- Ridgewater College

- Rochester Community and Technical College
- Saint Paul College

Institutional Spotlight: Lake Superior College

In 2016, Lake Superior College moved away from a silo-approach to developmental education by bringing together faculty, Adult Basic Education (ABE) instructors, advisors, and tutors to design and provide services that best fit the developmental student needs. The result was an integrated and accelerated model for all of its developmental reading and writing classes with strong, strategic learner support components.

As part of the college's Master Academic Plan's "Start Right" initiative, the lowest level of Read/Write classes have consistent, well-connected ABE support built into the regular class schedule. An ABE teacher assists both the reading and writing instructor during scheduled class time and then leads a one-hour open lab session between the reading and writing periods. This model reinforces the co-taught, integrated Read/Write curriculum and provides students additional time for reflection and practice. Additionally, both levels of the integrated Read/Write classes have designated advisors and Learning Center tutors who provide intentional advising and tutoring in the classroom. The advisors are also located in the Learning Center, allowing them to meet and build community with developmental students.

This integration of "curriculum + learner support" has proven to be very successful. Under traditional stand-alone developmental reading and writing design, the course completion rate increased from 56.15% to 65.09%. Subsequently, the percent of developmental reading and writing students successfully completing College Composition I increased from 65.31% to 82.26%. Based on the success of the Read/Write integration, developmental mathematics classes are transitioning into a similar integrated learned model.

Following the change in developmental education, the first to second fall retention rate for new students improved from 44.1% in fall 2015 to 49.7%. The retention rate for students of color also improved by 4.7 percentage points (35.5% to 40.2%) during the same time. As a campus we have embraced many "Start Right" elements that, among other things, include creating a more welcoming environment; strengthening the interactions between staff, faculty and students; and increased tutoring and intentional advising.

Defined math pathways

Math pathways allow for students with various degree plans to take only the required developmental education math courses that are needed for particular pathways. Additionally, many campuses with technical programs may have program math requirements that do not require college level mathematics for that particular industry and

associated credential. Many colleges have two or more math pathways available for students. Pathways may lead to college-level courses in college algebra, statistics, and/or quantitative reasoning. Colleges include:

- Alexandria Technical and Community College
- Anoka-Ramsey Community College
- Bemidji State University
- Central Lakes College
- Century College
- Dakota County Technical College
- Hennepin Technical College
- Inver Hills Community College
- Lake Superior College
- Mesabi Range College
- Minneapolis Community and Technical College
- Minnesota State College Southeast
- Normandale Community College
- North Hennepin Community College
- Pine Technical and Community College
- Saint Paul College
- South Central College
- Southwest Minnesota State University
- St. Cloud Technical and Community College
- Winona State University

Colleges are using a contextualized instruction model in which students learn developmental math concepts in the context of college-level curriculum. These institutions are implementing the Statway or Quantway programs, programs that promote growth mindset and holistic learning environments. Statway is a year-long introductory college-level statistics course focused on statistics, data analysis, and causal reasoning. Quantway is an accelerated quantitative reasoning course focused on quantitative reasoning. Colleges include:

- Minneapolis Community and Technical College
- Minnesota State College Southeast
- Normandale Community College
- North Hennepin Community College
- Ridgewater College
- Rochester Community and Technical College

Other curricular models

Other curricular models and programs have been implemented by many Minnesota postsecondary institutions to increase student success in developmental education, such as student support services (tutoring, advising, and early alert systems), curricular redesign (flipped classrooms, required labs, and on-line modules) and targeted programming (summer boot camps, bridge programs, partnerships with secondary schools, and partnerships with Adult Basic Education).

Summer bridge programs provide instruction and wrap-around student support services aimed to intervene early and enable students who need developmental education courses to complete them in the summer before freshman year so they can move right into college-level courses in the fall. Colleges include:

- Anoka Technical College
- Anoka-Ramsey Community College
- Century College
- Minneapolis Community and Technical College
- Minnesota State College Southeast
- Normandale Community College
- North Hennepin Community College
- Saint Paul College
- Rochester Community and Technical College

Institutional Spotlight: Normandale Community College

The Normandale Math department implemented the Statway model for developmental education students. This two-semester approach pairs a developmental course with a college-level course that results in developmental students being 3.6 times more successful at completing a college-level math course in one year (47% of students complete a college-level course in 1 year versus 13%).

English and Reading faculty implemented an Accelerated Learning Program seminar (ALP). The 8-credit program, FastTrack, allows students to complete both developmental and college-level writing in one semester. Seventy-four percent of FastTrack students finish the developmental sequence and complete a college-level writing course in one semester. In comparison, only 33% of our students who start in our highest stand-alone developmental course complete a college-level writing course in one year.

Reading faculty have combined two levels of developmental reading into one semester, FastTrack Reading. Fifty-four percent of FastTrack Reading students complete both levels of the developmental reading sequence in one semester as compared to 40% of students in stand-alone developmental reading course. Students feel empowered by the new options provided. In addition to saving time and money, students felt a greater sense of community due to the time spent learning and interacting with each other.

State-Level Findings

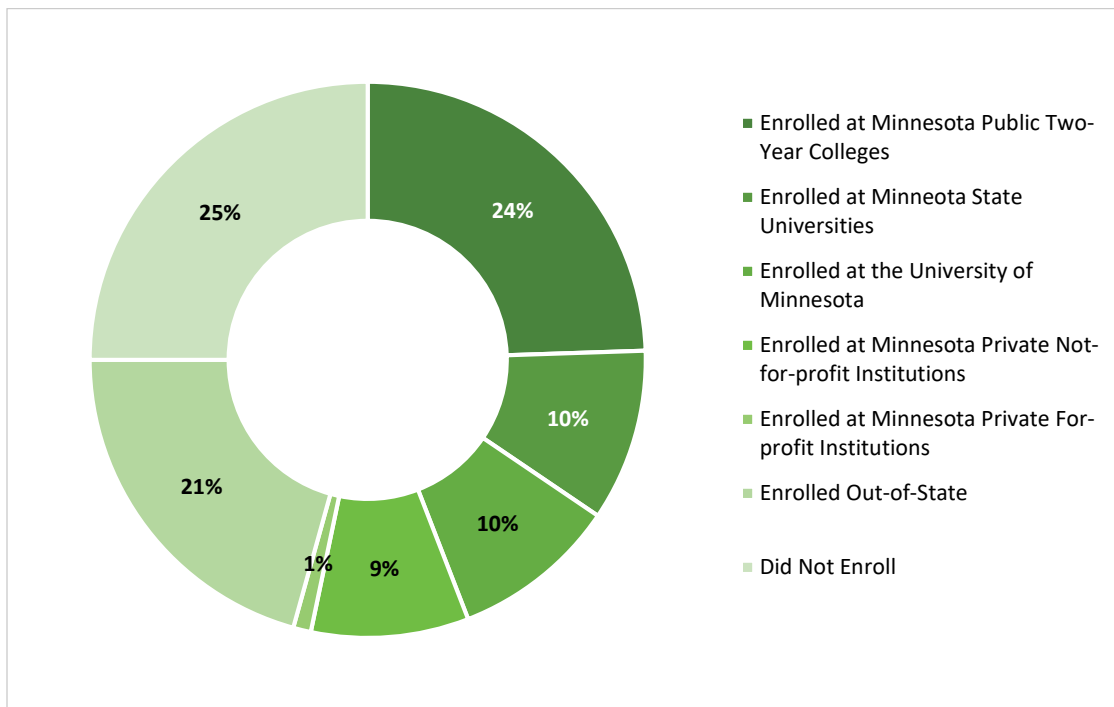
Data by individual public high school can be found in Appendix A (college enrollment) and Appendix B (developmental course taking).

College Enrollment of Public High School Graduates

Of the 2015² public high school graduates cohort, 54% enrolled within one year at a Minnesota college and 21 percent enrolled outside of Minnesota - a **combined enrollment rate of 75 percent**.

- Minnesota public two-year colleges 24%
- Four-year public colleges 20% (10% State Universities; 10% University of Minnesota)
- Private colleges 10% (9% private not-for-profit colleges; 1% private for-profit colleges)
- Colleges outside Minnesota 21%

Chart 1. 2015 College Enrollment for Public High School Graduates

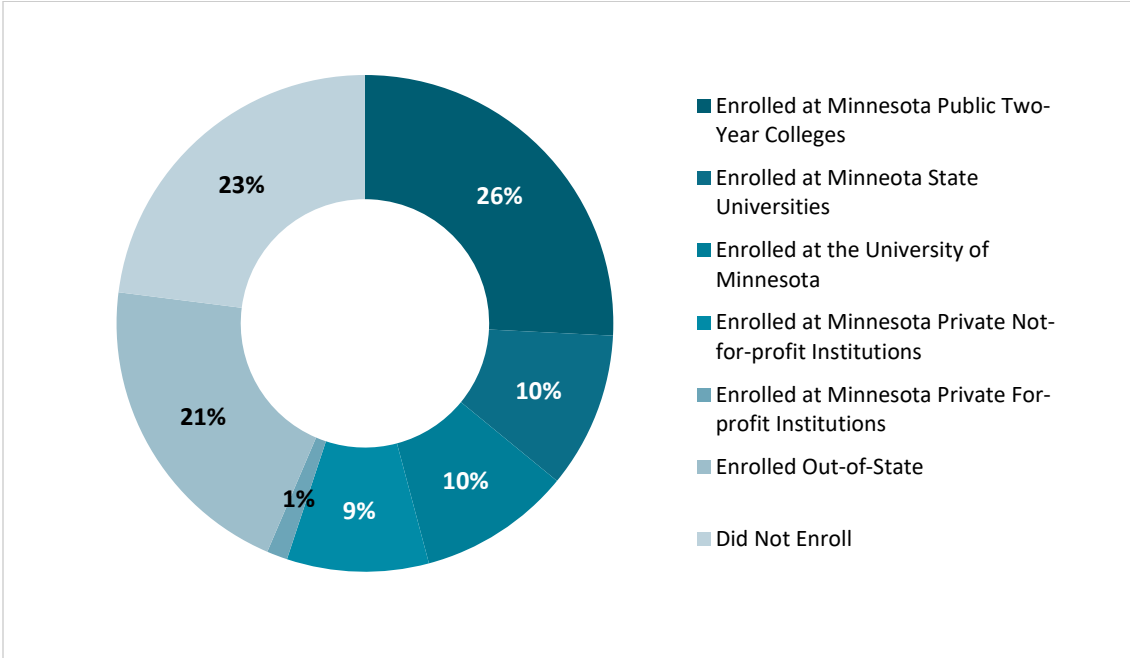


² Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Of the 2014 Minnesota public high school graduates, 77 percent enrolled in college within two years of graduating as follows:

- Minnesota public two-year colleges 26%
- Four-year public colleges 20% (10% State Universities; 10% University of Minnesota)
- Private colleges 10% (9% private not-for-profit colleges; 1% private for-profit colleges)
- Colleges outside Minnesota 21%

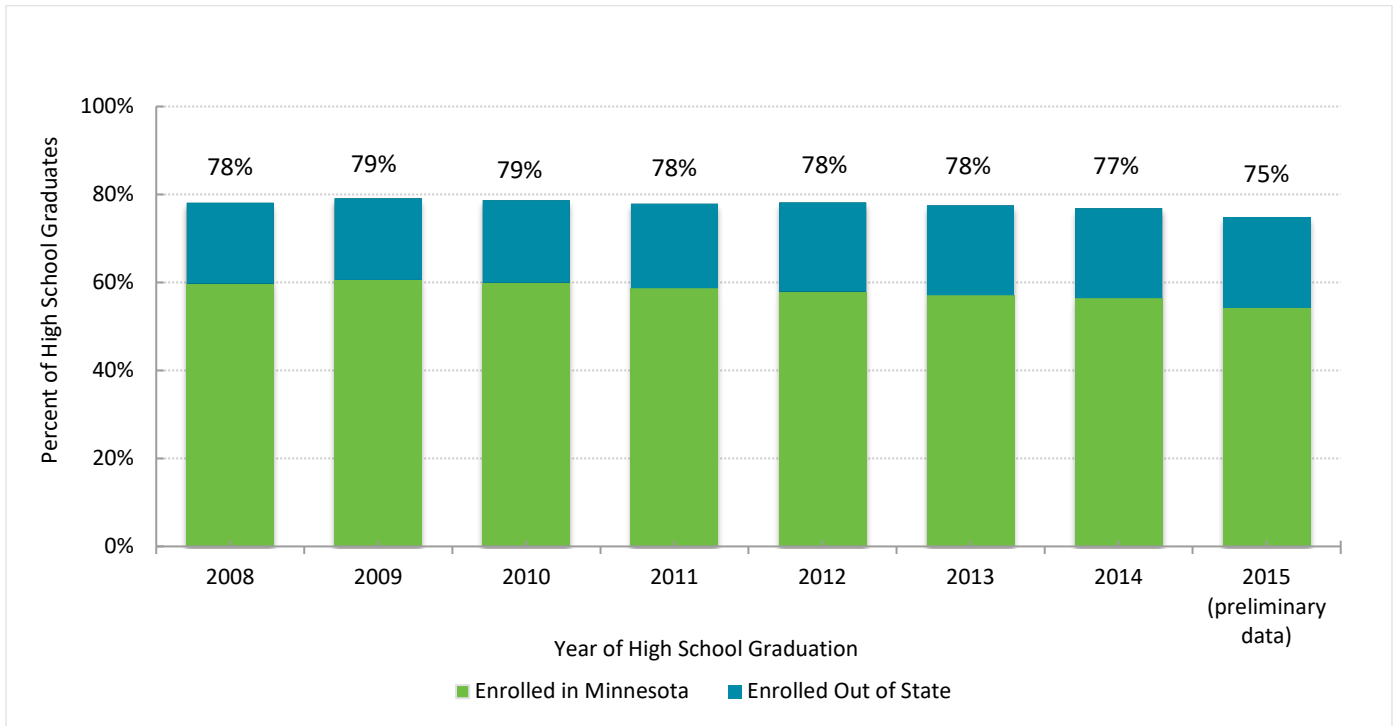
Chart 2. 2014 College Enrollment for Public High Schools Graduates



The two-year enrollment rate has remained relatively stable over the most recent eight years ranging from 77 percent to 79 percent³.

³ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Chart 3. College Enrollment within Two Years of High School Graduation Has Been Stable Between 2008 and 2015 for Minnesota Public High School Graduates



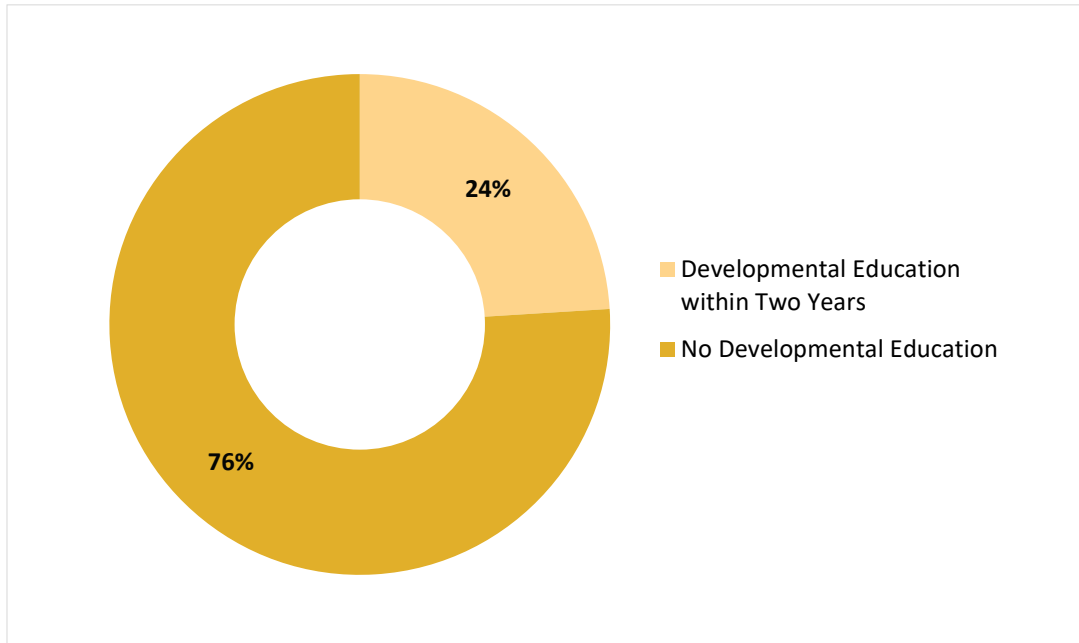
Developmental Education Course-Taking of Public High School Graduates

Twenty-four percent of 2014 public high school graduates enrolled in college also enrolled in one or more developmental education courses. The percent would likely be lower if developmental education course data for recent public high school graduates enrolling out-of-state were included.

Enrollment in developmental education varies by college type. Among graduates enrolled in developmental education:

- 84 percent enrolled at a Minnesota public two-year college
- 14 percent enrolled at Minnesota State Universities
- Two percent enrolled at the University of Minnesota, private not-for-profit colleges, and private for-profit colleges.

Chart 4. Developmental Education Enrollment of 2014 High School Graduates



As shown in Table 1 below, the Minnesota State system, reflecting its mission of providing open access, served the vast majority of graduates requiring developmental education (98% total; 84% at MN public two-year colleges and 14% at state universities). This includes providing developmental education courses for graduates primarily enrolled at other colleges.

Table 1: Number of Students Enrolling in Developmental Education within Two Years of High School Graduation by Sector⁴

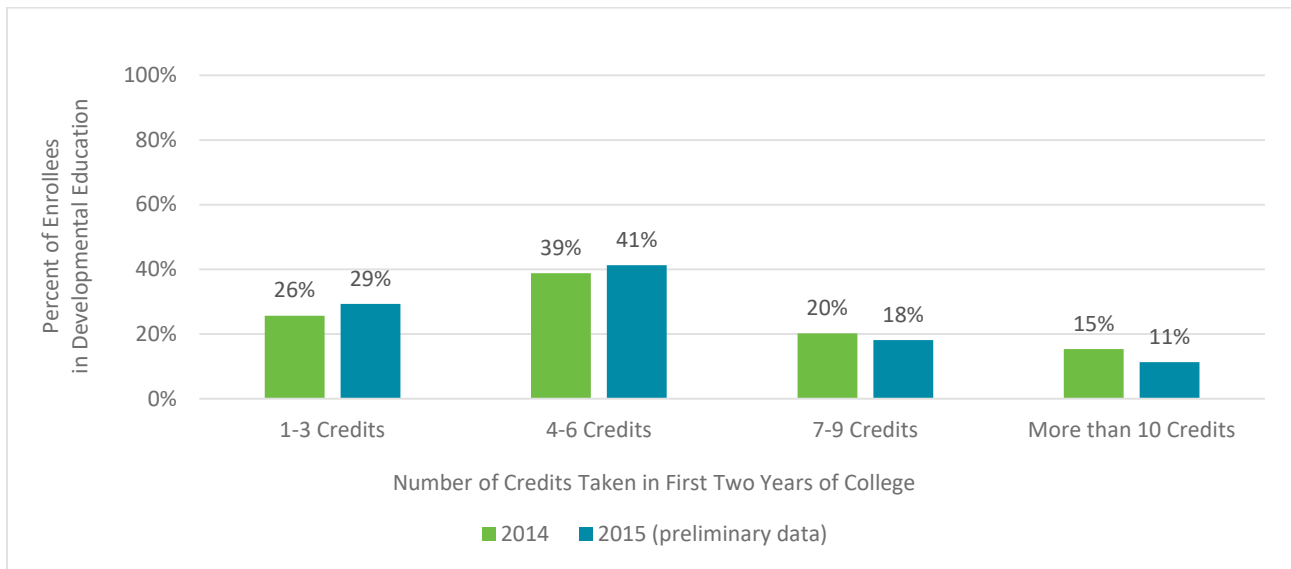
Year of High School Graduation	Total Minnesota	Minnesota State Colleges		Minnesota State Universities		Other Minnesota Colleges	
	Number of Students	Number of Students	Percent of Total	Number of Students	Percent of Total	Number of Students	Percent of Total
2008	10,572	8,547	81%	1,421	13%	604	6%
2009	9,898	8,135	82%	1,281	13%	482	5%
2010	10,062	8,484	84%	1,182	12%	396	4%
2011	9,430	8,062	85%	1,057	11%	311	3%
2012	9,044	7,673	85%	1,083	12%	288	3%
2013	8,440	7,141	85%	995	12%	304	4%

⁴ Includes students first enrolling outside MN then transferring to a MN institution. Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

	Total Minnesota	Minnesota State Colleges		Minnesota State Universities		Other Minnesota Colleges	
Year of High School Graduation	Number of Students	Number of Students	Percent of Total	Number of Students	Percent of Total	Number of Students	Percent of Total
2014	7,608	6,378	84%	1,070	14%	160	2%
2015	5,905	4,943	84%	845	14%	117	2%

Most public high school graduates enrolling in developmental education take one to six credits. Overall, 26 percent of 2014 public high school graduates enrolled in one to three credits of developmental education. Fifteen percent enrolled in 10 or more credits⁵.

Chart 5. Developmental Education Credit Intake (First Two Years)

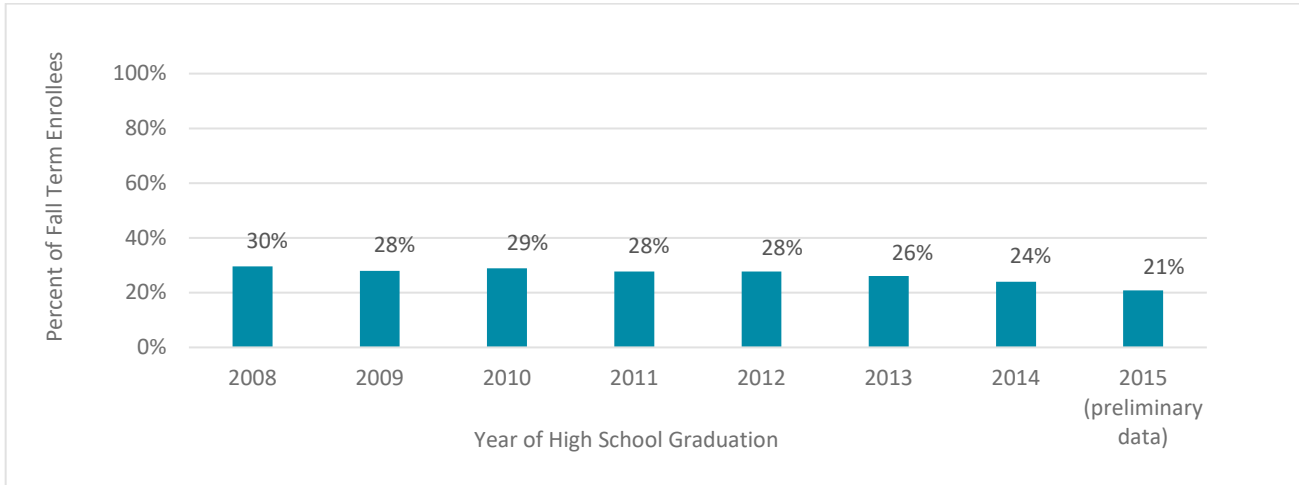


Trends in Developmental Education Over Time

In Minnesota, the percent of public high school graduates enrolled in one or more developmental credits during fall term has declined from 30% to 24% between 2008 and 2014.

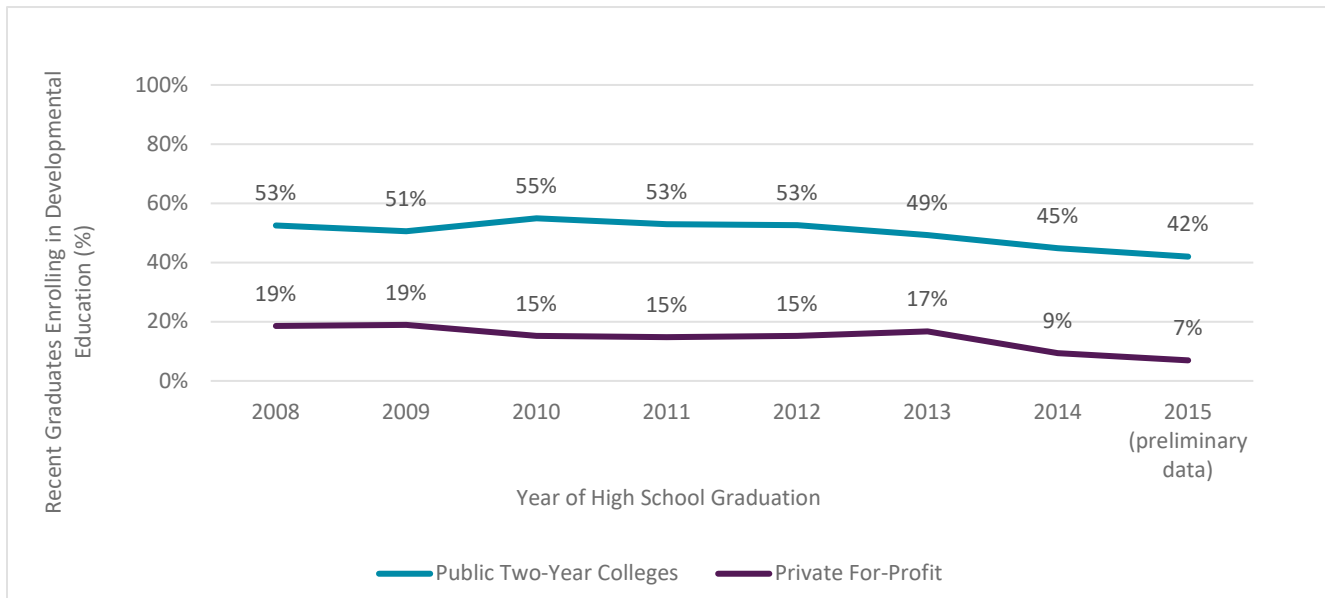
⁵ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Chart 6. Percent of Public High School Graduates Enrolled in Developmental Courses Declining From 2008 (30%) to 2014 (24%)⁶



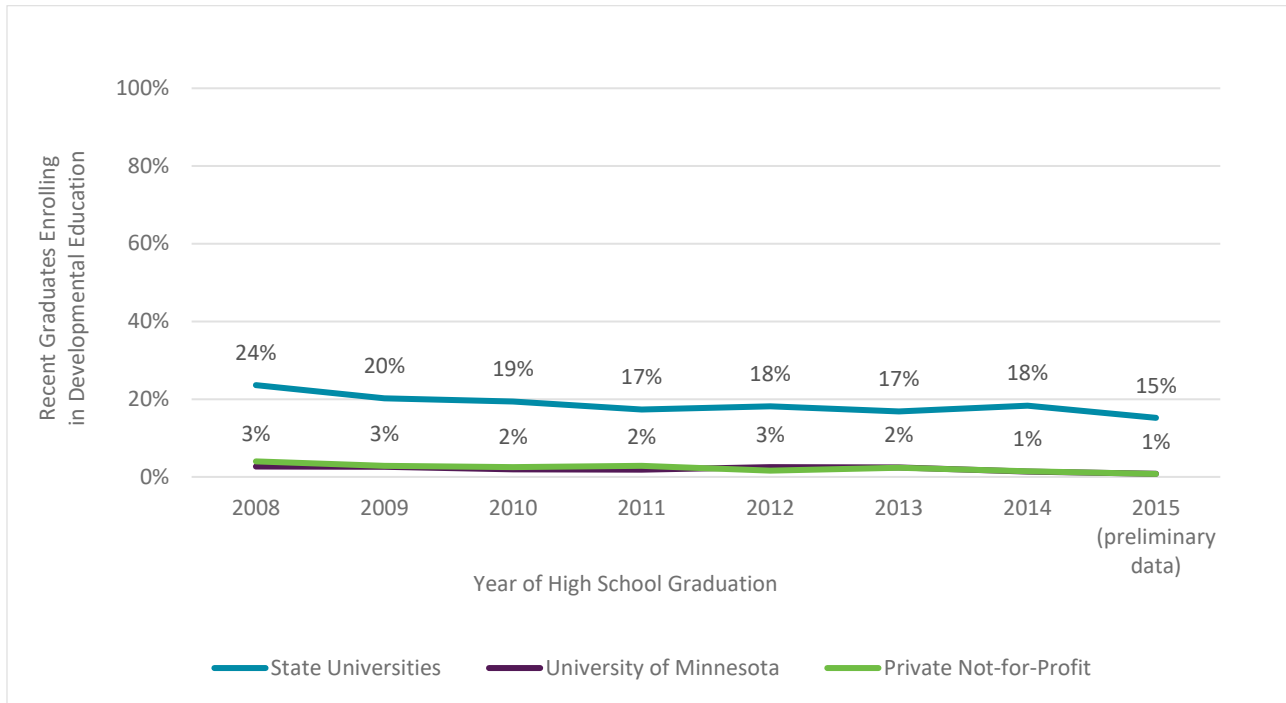
State rates mask differences in developmental education enrollment within college sectors. Approximately half of all high school graduates enrolled in public two-year colleges participated in developmental education courses within two years of graduation from high school. The rate increased during the recession, as participation in college increased, but has now declined. Private for-profit college enrollment in developmental education ranged between 9% and 19%.

Chart 7. Percent of Recent Graduates Enrolled in Developmental Education Decreasing at Minnesota Public Two-Year Colleges



⁶ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

**Chart 8. Percent of Recent Graduates Enrolled in Developmental Education
Decreasing at Four-Year Colleges**



State universities show a decrease in the number of students enrolled in developmental education between 2008 (24%) and 2014 (18%)⁷.

The percentage of public high school graduates enrolling in developmental education at private not-for-profit institutions and at the University of Minnesota is very low across all years (1% to 3%).

College Outcomes

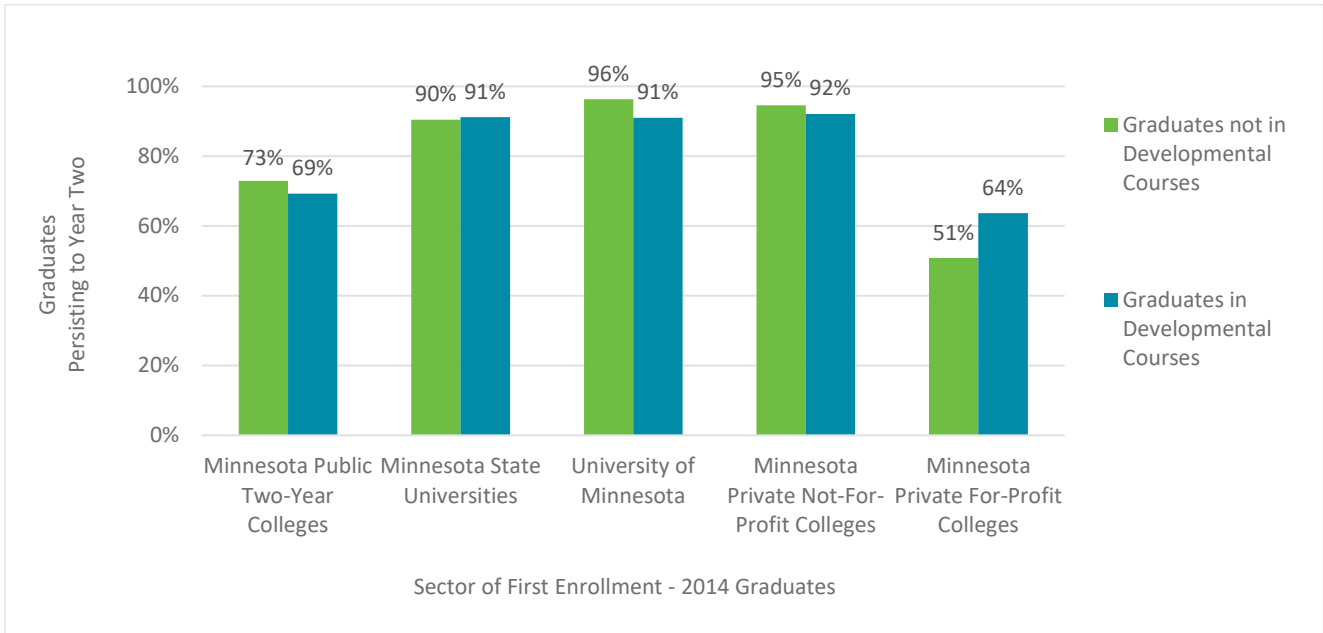
Across all classes of graduates, students in developmental education persisted from first to second year at rates comparable to other students, but had lower completion rates.

Enrollment in developmental education does not mean that a student cannot be successful in college. This report examined persistence in college and graduation as measures of student success.

For the class of 2014, developmental education enrollees persisted from first to second year at rates slightly lower than peers at public two-year colleges, but similar at Minnesota State Universities.

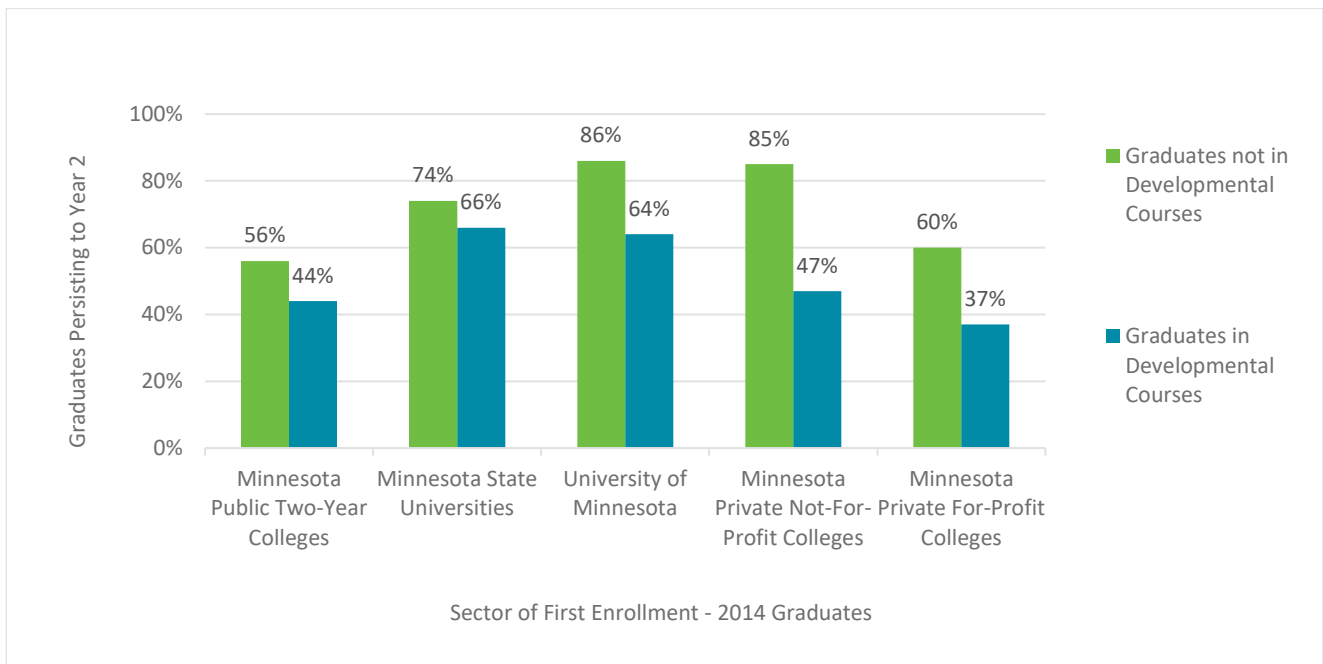
⁷ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Chart 9. Developmental Education Students Persist at Varying Rates Compared to Other Students



Analysis of graduation data for the six years following high school graduation shows that the class of 2009 developmental education enrollees at state universities had the highest completion rates. The class of 2009 developmental education enrollees had sixth-year completion rates ranging from 37% at for-profit institutions to 66% at Minnesota State Universities.

Chart 10. Developmental Education Students Have Lower Completion Rates Compared To Other Students



Gender

While equal numbers of males and females graduate from public high school each year, female public high school graduates enrolled in college at rates approximately 9% points higher than males⁸.

Chart 11. Gender of High School Graduates

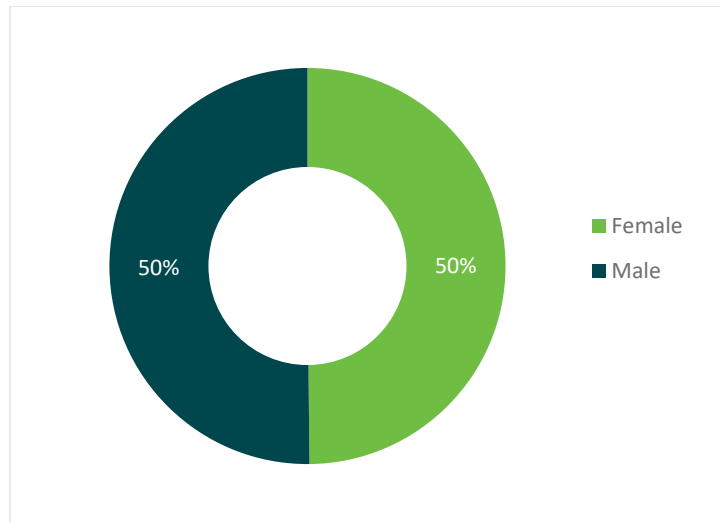
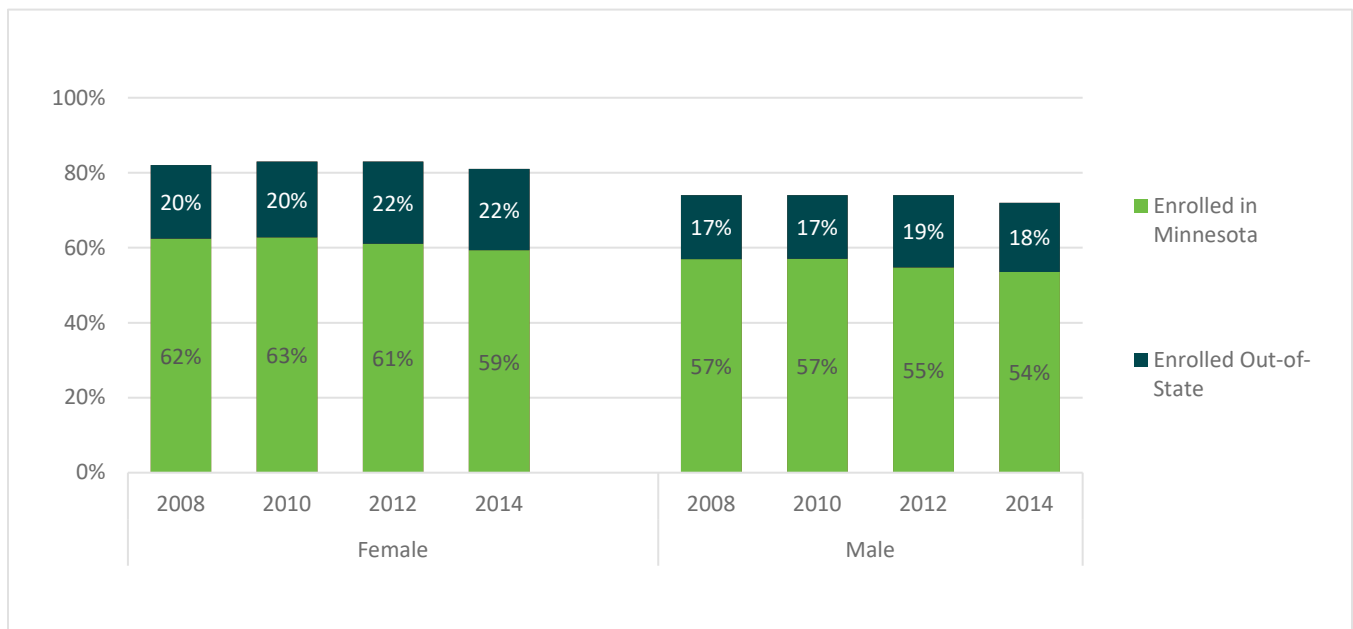


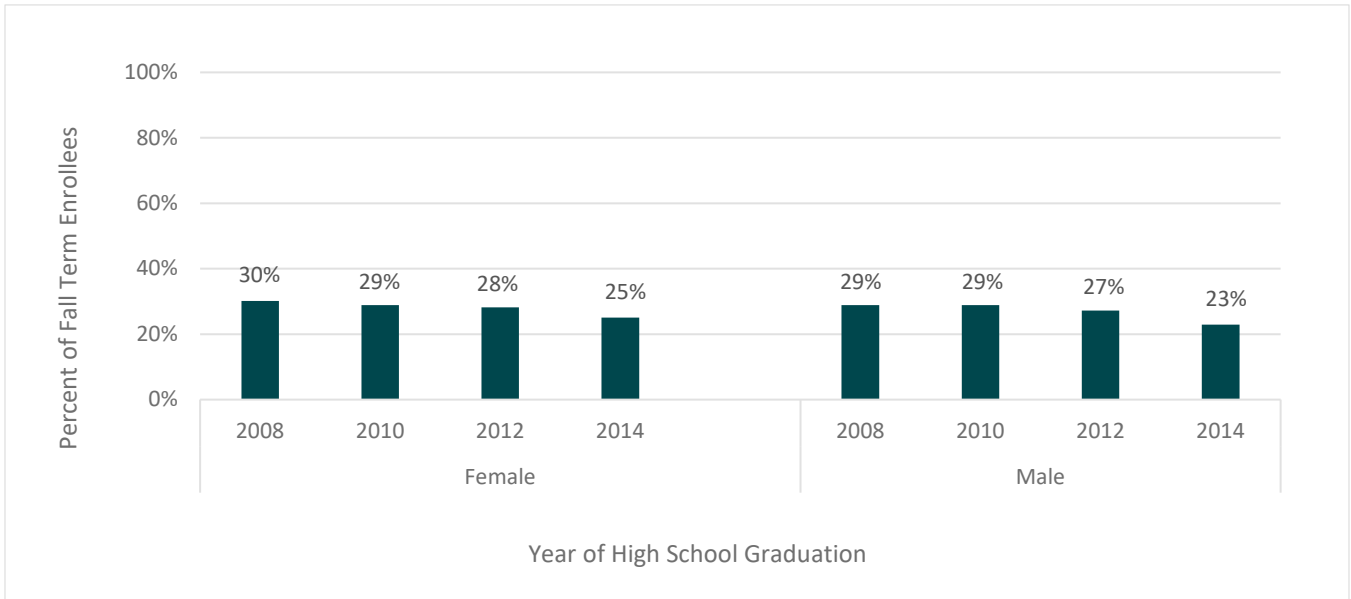
Chart 12. Females Enroll in College within Two Years at Higher Rates than Males



⁸ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

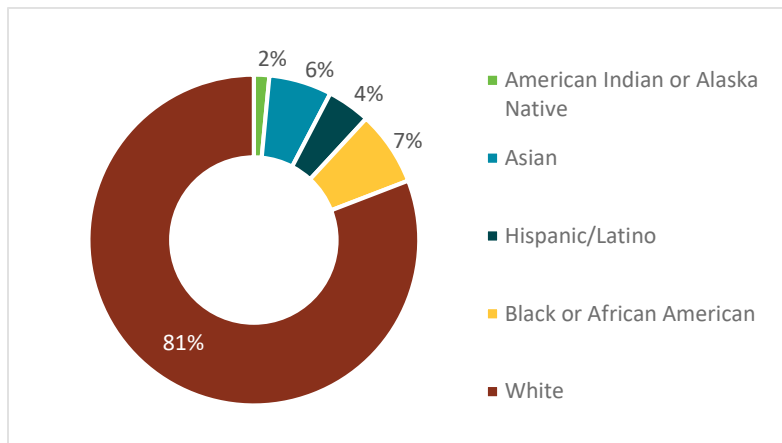
Across all colleges, female public high school graduates enrolled in developmental education at rates comparable to males. Among both male and female graduates, developmental education course taking has declined between 2008 and 2014⁹.

Chart 13. Among All Graduates Enrolling In College, Females and Males Enroll In Developmental Education at Similar Rates



Race/Ethnicity

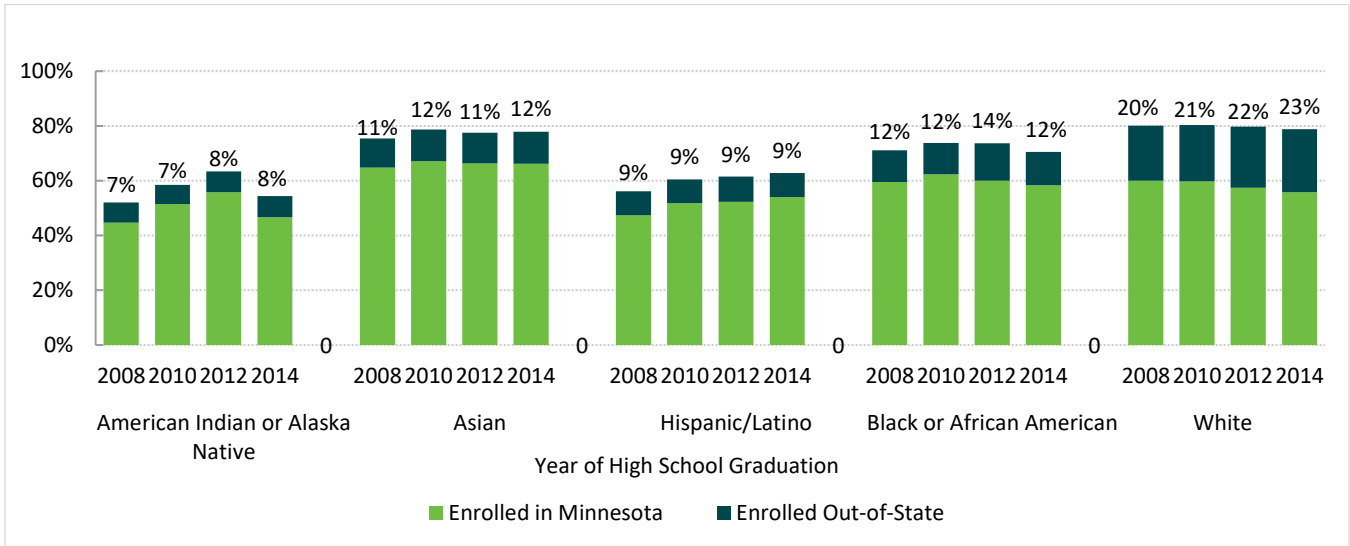
Chart 14. Approximately 19% of Minnesota Public High School Graduates Are Students of Color



⁹ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

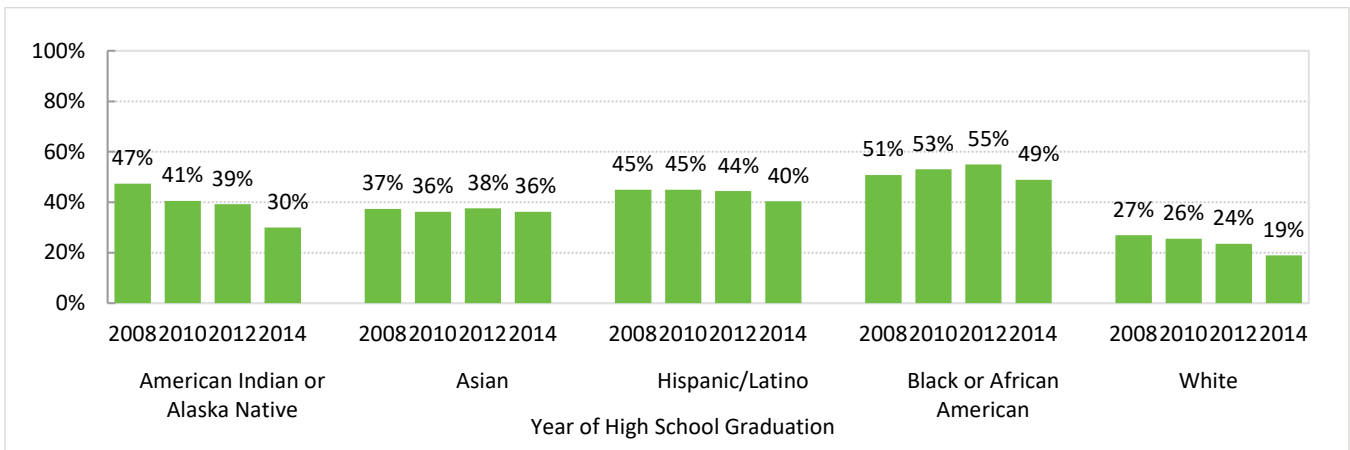
A significant gap in college enrollment persists across racial/ethnic groups for Minnesota public high school graduates, especially for Hispanic or Latino and American Indian or Alaska Native graduates. White and Asian public high school graduates across all years enrolled in college at rates higher than other racial/ethnic groups. The difference in enrollment in college within the first two years between Asian and White graduates (78%, 79%) as compared to Hispanic or Latino graduates (63%) is 18% for the class of 2014. Seventy-one percent of Black or African American graduates from the class of 2014 enrolled in college within two years.

Chart 15. College Enrollment Has Increased Over Time but Enrollment Gaps Exist



Students of color enrolled in college at lower rates than white students did, but at higher rates in developmental education. Black or African American 2014 graduates continue to have the highest percentage (49%) of fall enrollees taking developmental education. Asian, American Indian or Alaskan Native and Hispanic or Latino 2014 graduates enrolled in developmental courses at rates between 30 and 40 percent as compared to 19 percent of White fall enrollees.

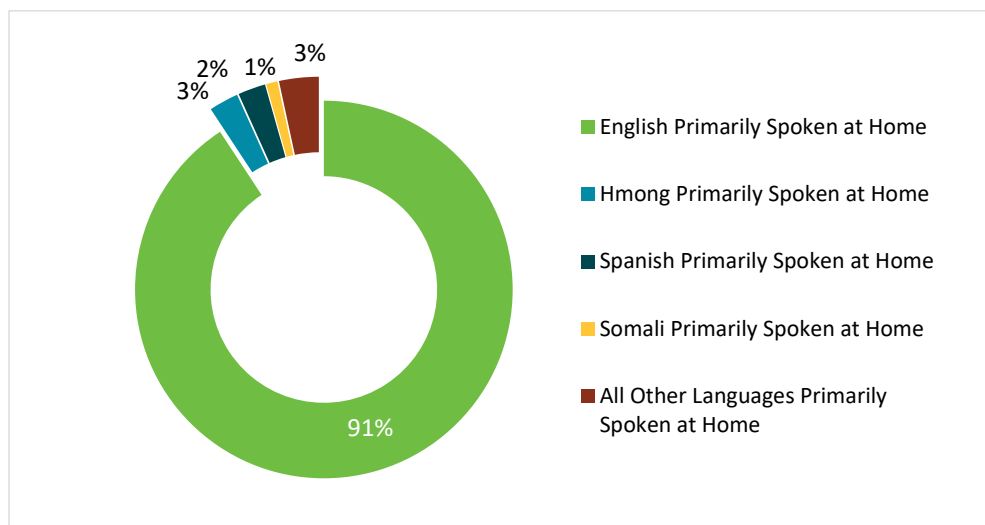
Chart 16. High School Graduates of Color Enroll In Developmental Education at Rates Higher Than Whites



Language Spoken at Home

Across all graduating classes, public high school students who spoke Somali at home had much higher rates of college enrollment than other primary language groups. Approximately nine percent of Minnesota public high school graduates spoke a language other than English at home. The languages most commonly spoken were Hmong, Spanish and Somali.

Chart 17. Languages Spoken At Home: 9% of High School Graduates Spoke a Language Other Than English at Home



Primary Language Spoken at Home

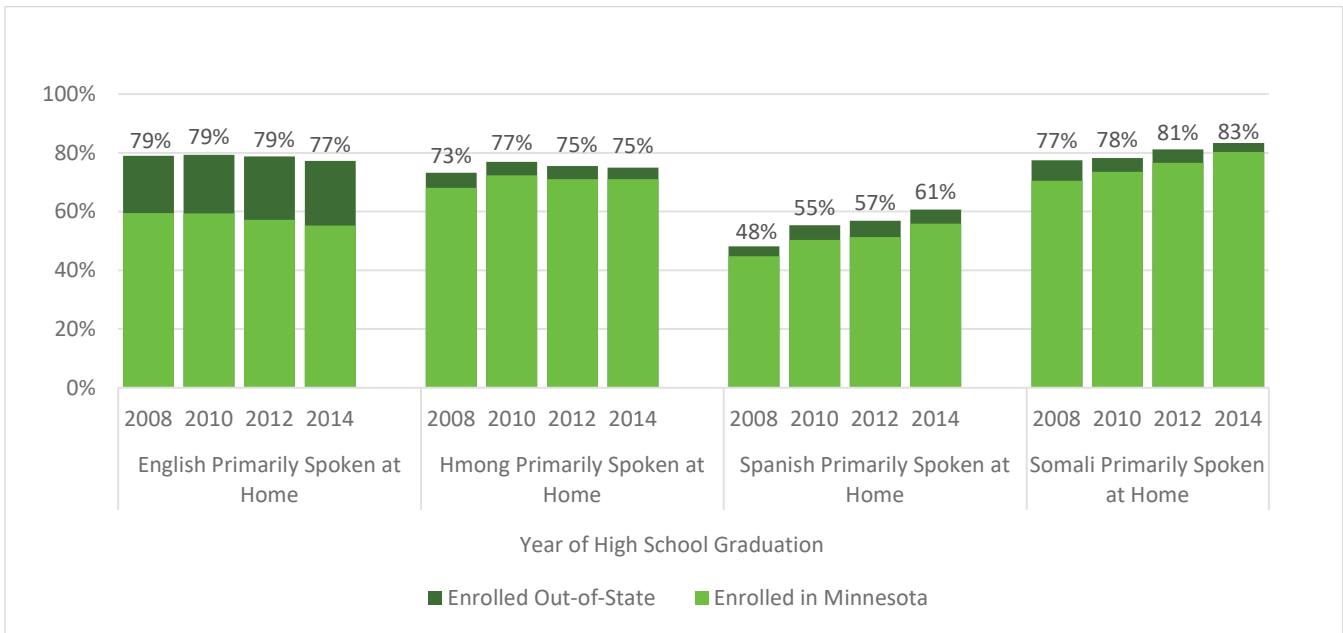
Minnesota public high school graduates who spoke Somali at home enrolled (83%) in college within two years at higher rates than any other primary language group including English speakers¹⁰.

Minnesota public high school graduates who spoke Spanish at home enrolled (61%) in college within two years at rates lower than other primary language groups.

Spanish speaking graduates may encounter barriers to college enrollment based on residency issues. Passage of the Minnesota Dream Act may result in an increase in college enrollment for these graduates. Analysis of college enrollment rates over time shows Spanish speaking public high school graduates enrolled in college within two years increased sharply from 2008 to 2014.

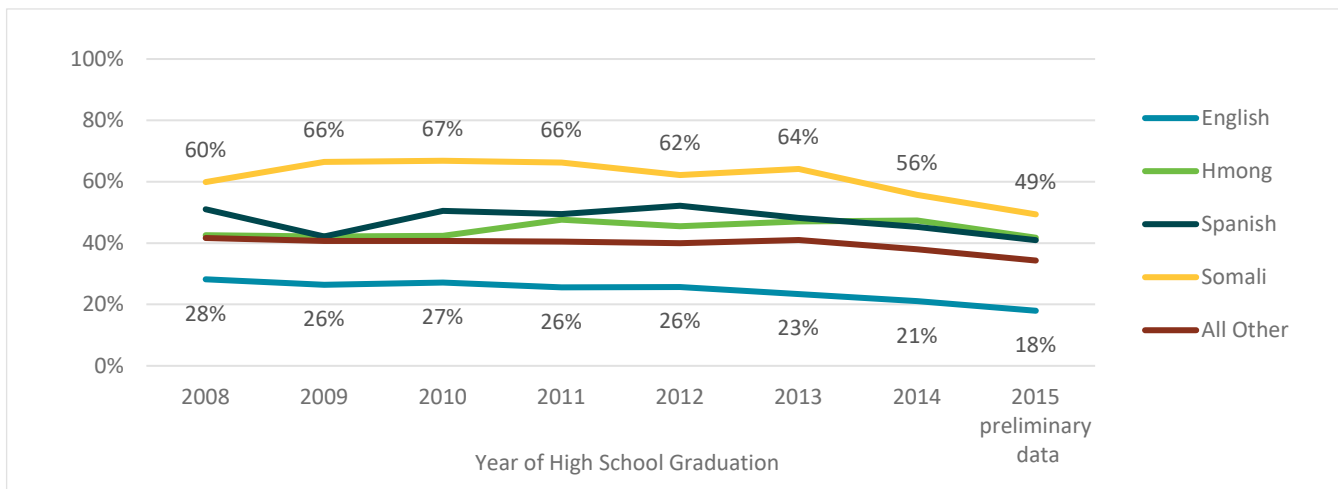
¹⁰ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Chart 18. College Enrollment Within Two Years Has Increased Among Spanish Speaking Graduates But Gaps Remain



Graduates whose primary home language was not English enrolled in developmental education at rates higher than English speakers¹¹. Reading and writing courses are primary components of developmental education used to improve language skills, especially by students whose first language is not English. It is not surprising to see a higher utilization of developmental education among students who may have immigrated to this country.

Chart 19. Graduates whose Primary Home Language is not English Enroll in Developmental Education at Higher Rates



¹¹ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

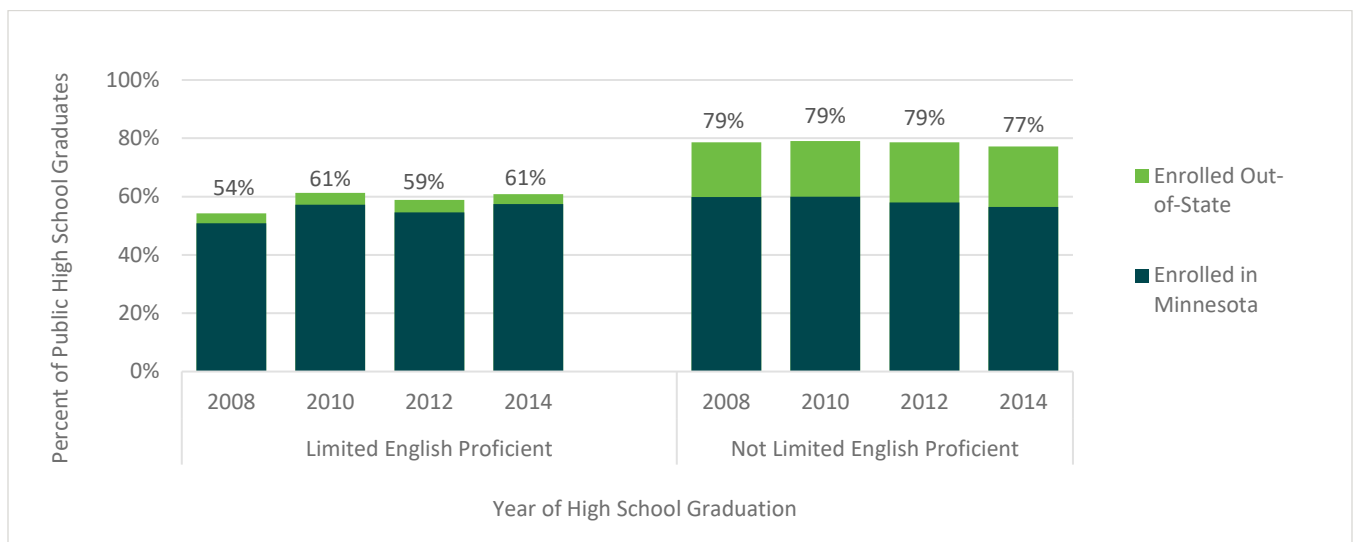
Graduates who spoke Somali at home enrolled in college within two years of graduating at higher rates than other non-native English speakers; however, students who spoke Somali at home also enrolled (56% for class of 2014) in developmental education at percentages 9 percentage points higher than the next highest group, Hmong students (47%).

English Language Learners

The majority of 2014 graduates identified as English Language Learners enrolling in college also enrolled in developmental education¹².

In addition to language spoken at home, another measure of language skills is English Language Learners within K-12 education. Approximately two percent of Minnesota public high school graduates were identified as an English Language Learner. Students considered English Language Learner lagged behind their peers in college enrollment. Students considered an English Language Learner enrolled almost exclusively in Minnesota colleges, few enrolled at out-of-state colleges.

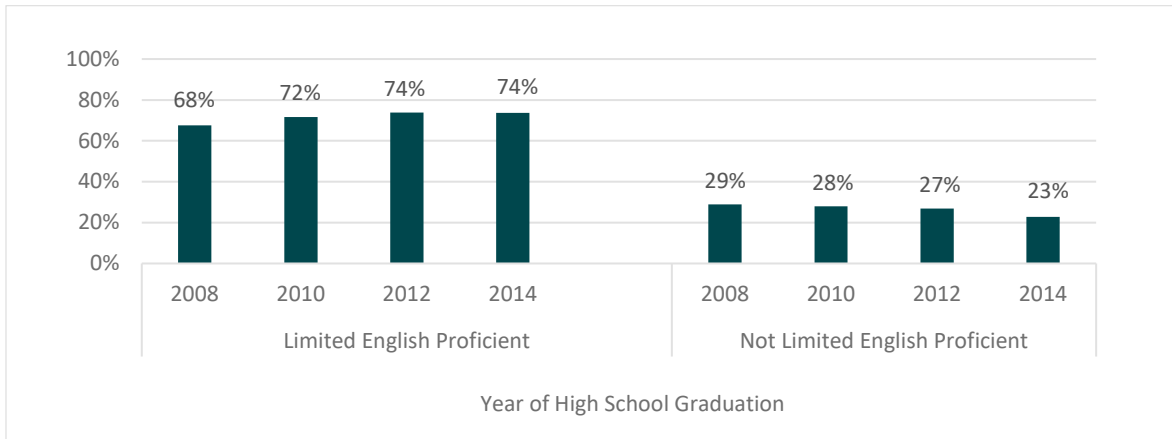
Chart 20. Limited English Proficient Graduates Enroll In College within Two Years at Lower Rates than Students Not Identified As Limited English Proficient



Graduates considered English Language Learners enrolled in developmental education at rates (74%) triple that of graduates not identified as an English Language Learner (23%).

¹² Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

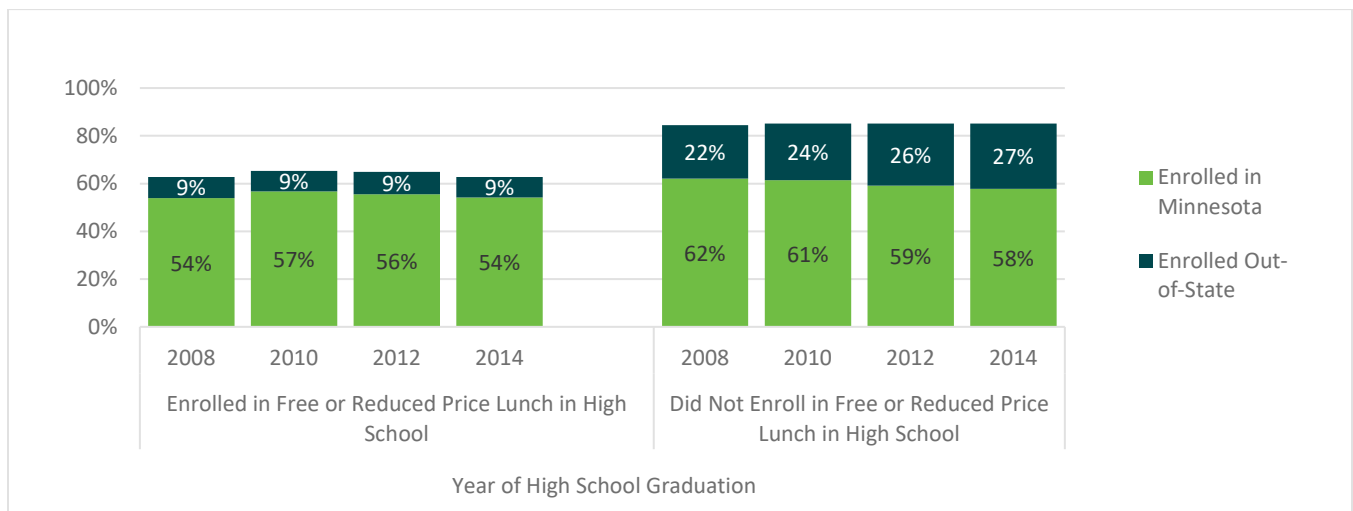
Chart 21. Among All Graduates Enrolling In College, Graduates Identified As Limited English Proficient Enroll In Developmental Education at Higher Rates



Economic Status

Participation in free/reduced-price lunch can serve as an indicator of economic status of public high school students. Approximately 34% of Minnesota 2014 public high school graduates received free/ reduced-price lunch in grades 9-12¹³. Graduates from 2008 to 2014 who participated in free/reduced-price lunch show a 22% lower rate in college enrollment than the rest¹⁴. Both economic groups increased college enrollments over time. Students who did not participate in free and reduced-price lunch enrolled in college outside of Minnesota at higher percentages than free/reduced-price lunch students did.

Chart 21. College Enrollment Rates of Free/Reduced-price Lunch Students Lower than Peers



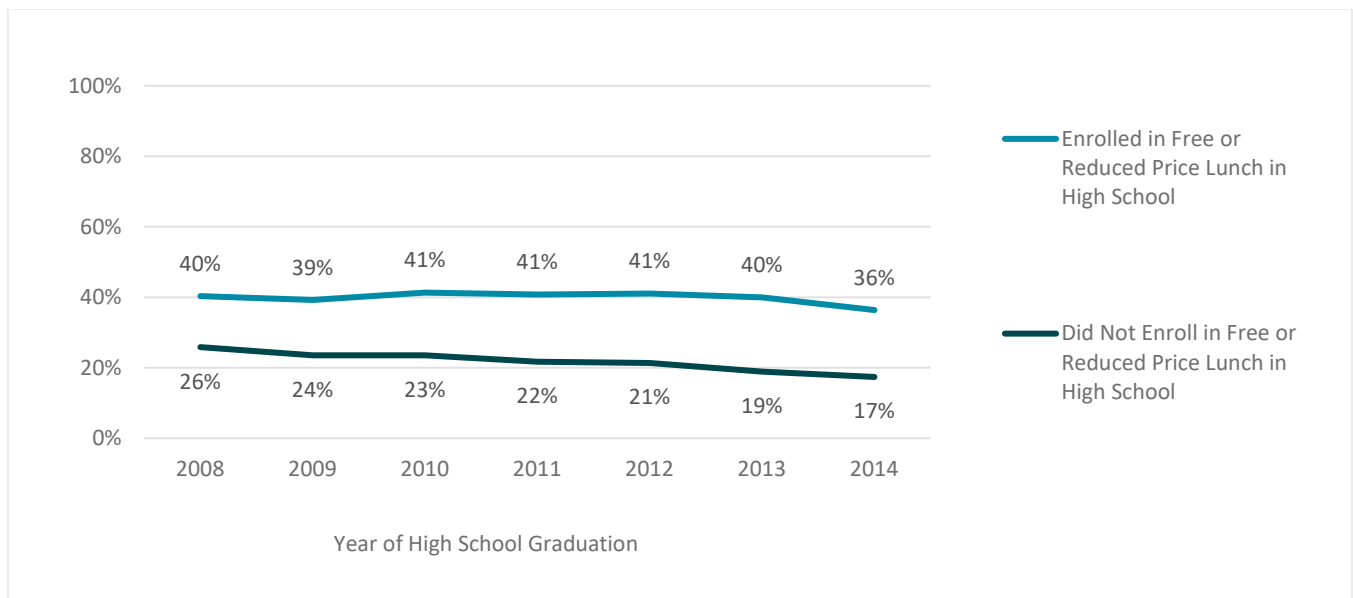
¹³ Eligibility for free lunch is up to 130 percent of poverty thresholds. Reduced price lunch is 131 to 185 percent of poverty thresholds.

¹⁴ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Developmental Education Course-Taking by Economic Status

Public high school students (2014) who participated in free/reduced price lunch in high school had higher rates of developmental education enrollment (36%).

Chart 22. Graduates Who Participated In Free/Reduced-Price Lunch Enroll In Developmental Education at Higher Rates¹⁵



The gap in developmental education enrollment between free/ reduced-price lunch students and other students is 19%. Thirty-six percent of 2014 free/reduced-price lunch graduates enrolled in fall term took developmental education courses as compared to 17% of other graduates.

More research is needed to understand the link between income and college readiness in Minnesota. One partial explanation for these trends is that students from higher socioeconomic backgrounds might take more college preparatory classes and supplementary services that help them be more prepared for college.

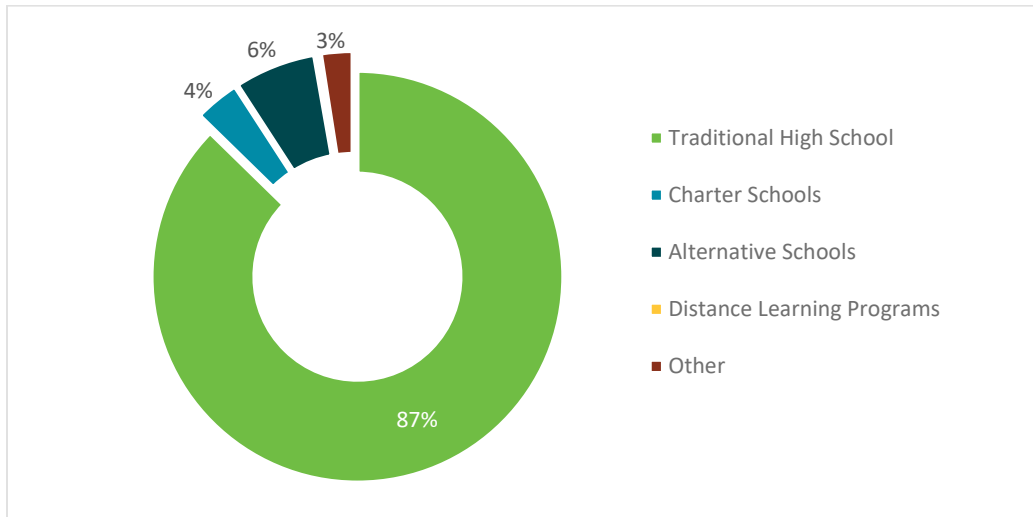
High School Type Attended

Non-traditional public high school graduates enrolled in college at lower rates

Class of 2014 graduates from traditional public high schools showed higher college enrollment rates (83%) compared to charter school (59%), alternative public high schools (32%) and distance learning programs (54%).

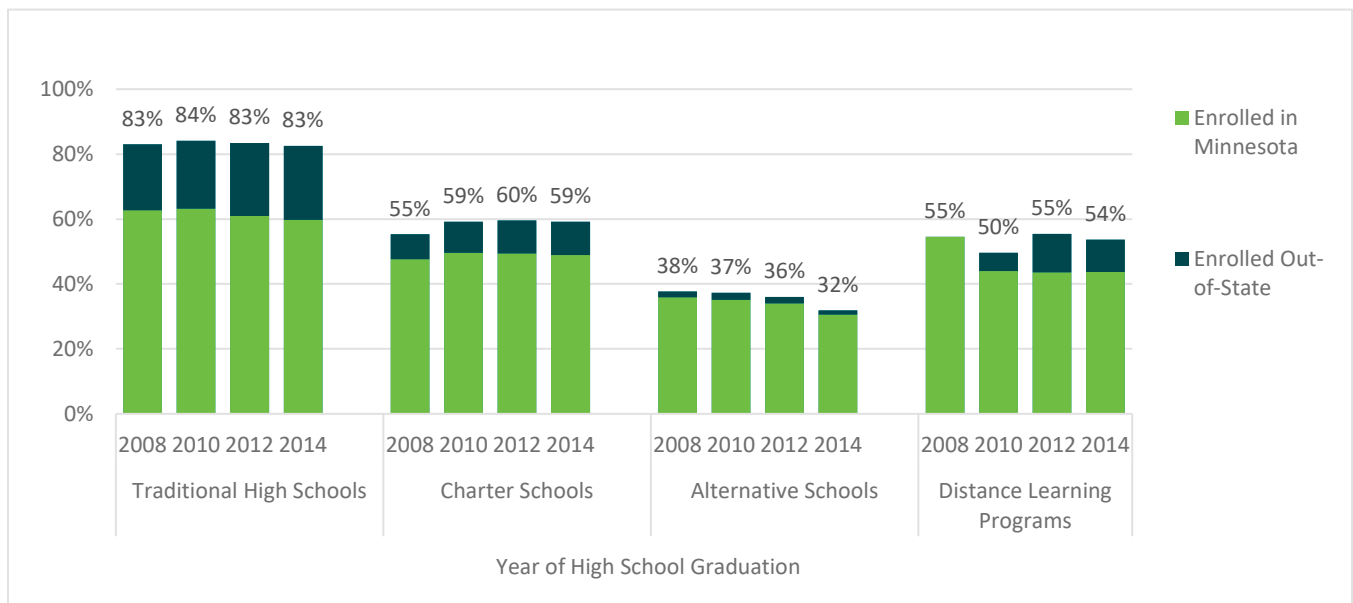
¹⁵ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Chart 23. College Enrollment by Type of High School¹⁶: 12% of Public High School Graduates Analyzed For This Report Attended Non-Traditional Schools



One critical caveat to this finding is that schools grouped together under the headings of “traditional” or “charter” serve a variety of educational missions, offer different programs and vary in size and geographic location. One would expect there to be wide variation in enrollment and developmental education course taking among individual high schools within these groups.

Chart 24. Graduates from Traditional Public High Schools Enroll In College within Two Years at Rates Higher Than Peers

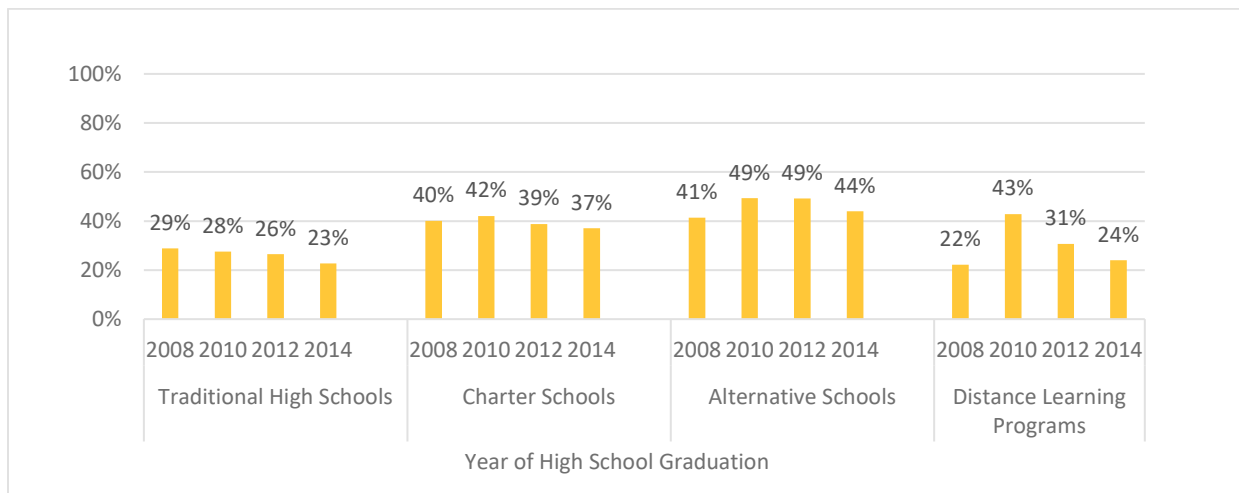


¹⁶ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Developmental Education by High School Type Attended

Graduates of non-traditional public high schools enrolled in developmental education at slightly higher rates than graduates from traditional public high school did. Class of 2014 graduates of traditional schools and distance learning programs showed lower developmental enrollment rates (23%, 24% respectively) as compared to charter schools (37%), alternative high schools (44%).

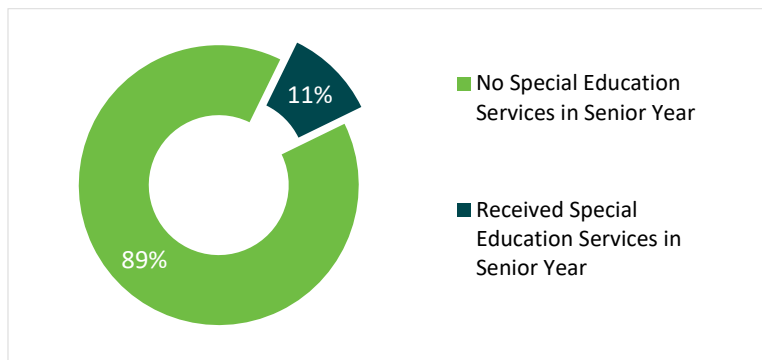
Chart 25. Graduates of Non-Traditional High Schools Enroll In Developmental Education at Rates Higher Than Peers¹⁷



Special Education Services

Approximately 11 percent of Minnesota public high school graduates received special education services in senior year (the year prior to high school graduation).

Chart 26. High School Students Who Received Special Education Services in Senior Year



¹⁷ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Forty-six percent of 2014 high school graduates identified as receiving special education services enrolling in college also enrolled in developmental education.

Forty percent of 2014 graduates receiving special education services in their senior year enrolled in college within two years as compared to 81 percent of other graduates.

Chart 27. Students Receiving Special Education Services Enroll In College within Two Years at Lower Rates than Students Not Receiving Special Education Services¹⁸

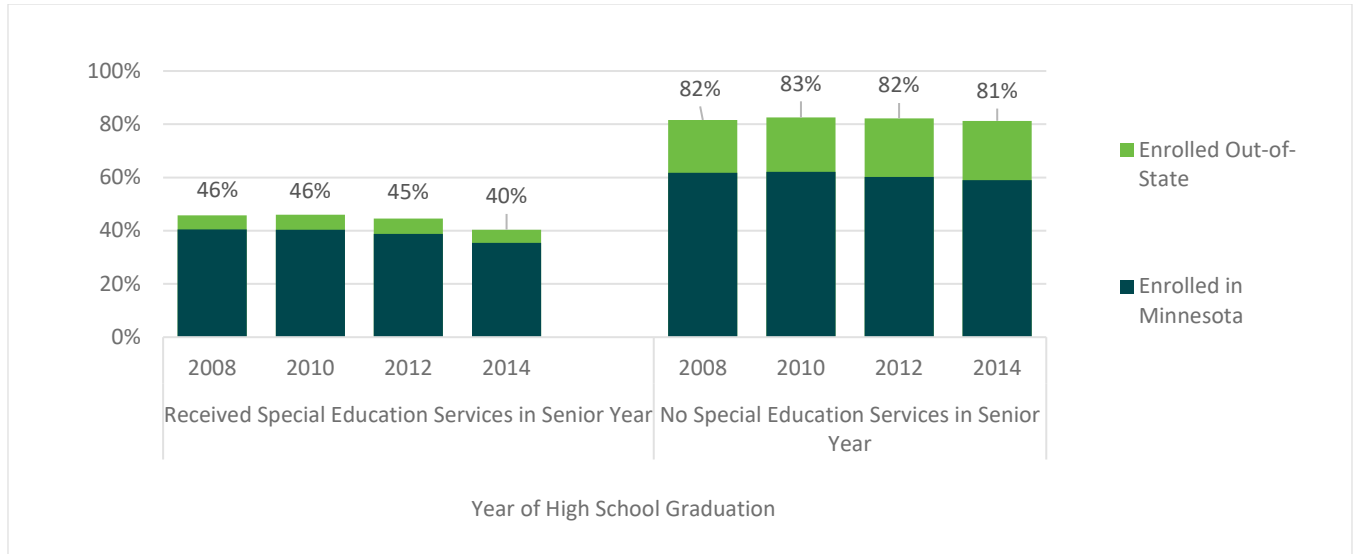
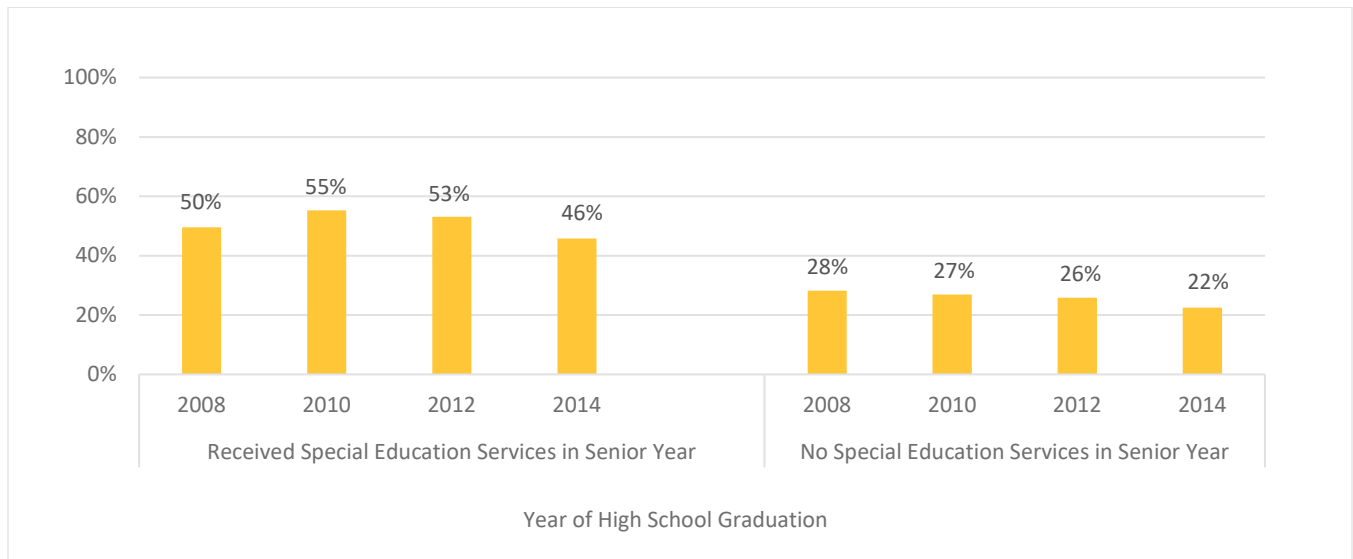


Chart 28. Among All Graduates Enrolling In College, Graduates Receiving Special Education Services Enroll In Developmental Education at Higher Rates



¹⁸ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Testing

By definition, college readiness means being able to succeed in credit-bearing college courses without developmental education. Pre-high school graduation data can be used to identify students with a higher likelihood of enrolling in college developmental education. Using available K-12 data, educators can provide students with the extra supports needed to prepare them for college-level academic studies.

Historically public school students take a range of required and recommended assessments ranging from but not limited to: MCA, NWEA, EXPLORE, PLAN, ACT and SAT. State testing is limited to only the MCA. Data for Minnesota public high school graduates from 2008 to 2015 allowed an initial review of the current alignment of K-12 MCA math and reading tests, ACT tests and developmental education course-taking as highlighted below¹⁹.

High School Accountability Tests - Math & Reading

2014 public high school graduates who met the reading and math standards on statewide accountability tests had higher college enrollment rates and lower developmental education rates compared to students who did not meet standards.

Accountability tests given to Minnesota public high school students included the MCA-II, MCA-III, MOD-II, MTAS and MTELL across math and reading. There is a sizeable gap in both college enrollment and developmental education needs among groups by reported proficiency.

Among 2014 graduates taking the state accountability test:

Math

- 90% of grade 11 students meeting math standards enrolled in college and only 9% enrolled in developmental education within two years of graduating
- 67% of grade 11 students not meeting math standards enrolled in college and 44% enrolled in developmental education within two years of graduating

Reading

- 85% of grade 10 students meeting reading standards enrolled in college and 17% enrolled in developmental education within two years of graduating
- 59% of grade 10 students not meeting reading standards enrolled in college and 55% enrolled in developmental education within two years of graduating

¹⁹ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

Chart 29. College Enrollment Rates: Graduates Proficient in Math and Reading Enroll In College within Two Years at Rates Higher Than Peers²⁰

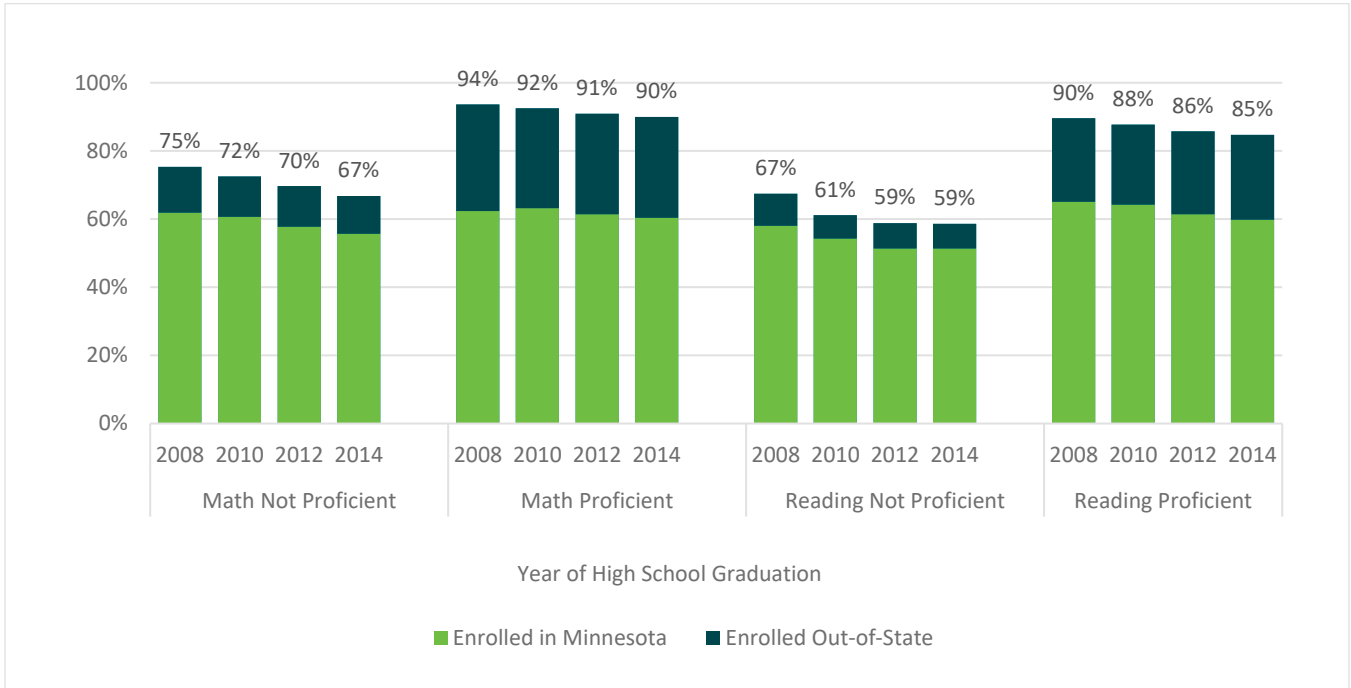
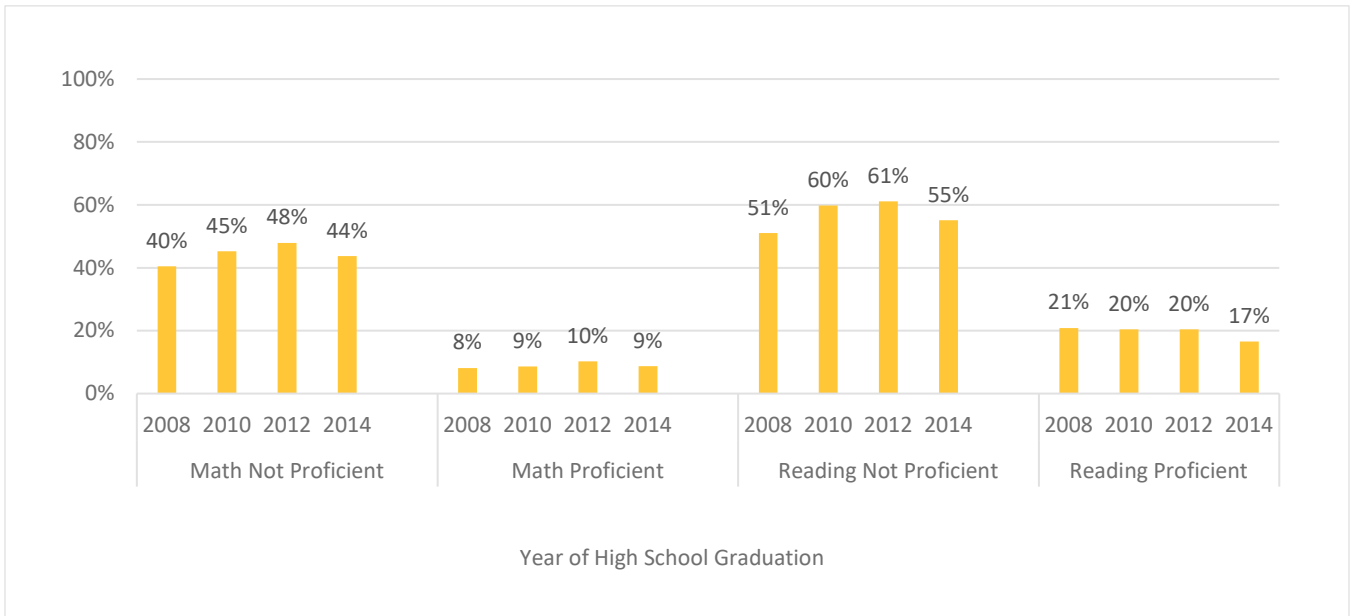


Chart 30. Development Education Enrollment: Graduates Proficient in Math and Reading Enroll In Developmental Education at Rates Lower Than Peers



²⁰ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

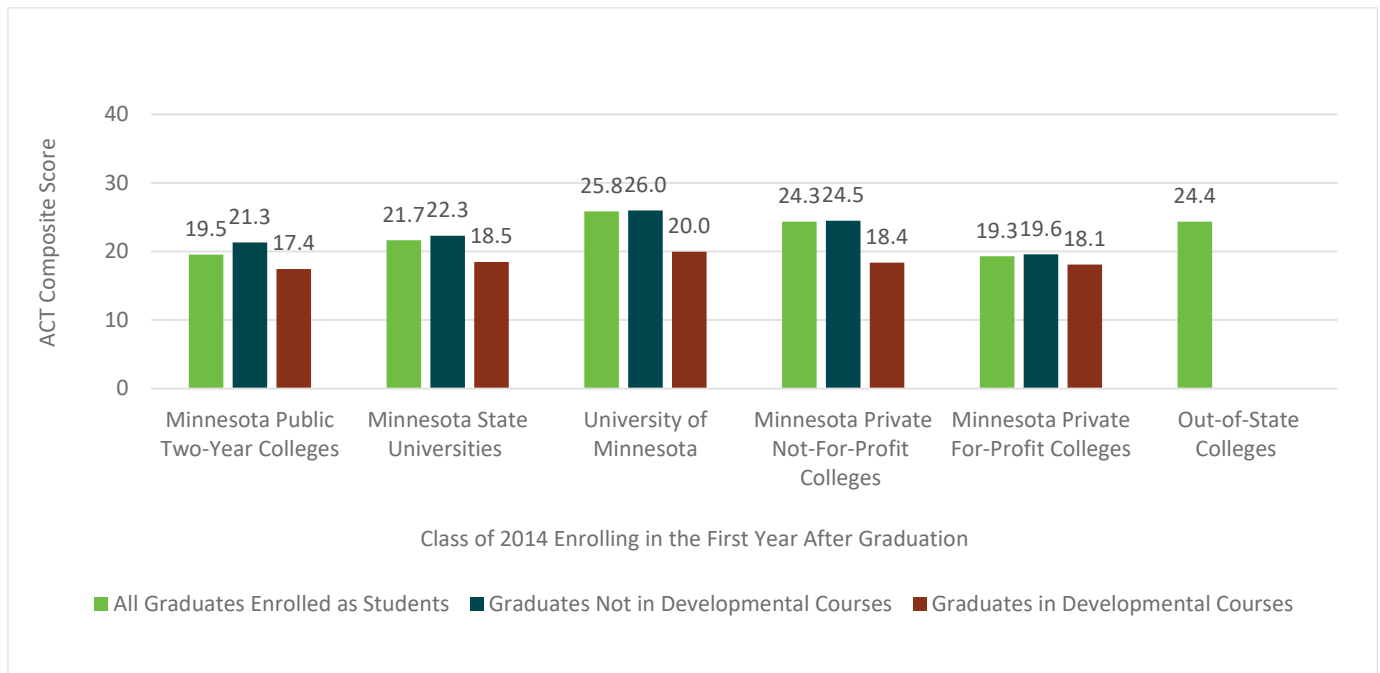
College Entrance Exams - ACT

For the class of 2014, the average ACT scores of students enrolled in developmental education were lower than the scores of students not enrolled in developmental education.

ACT composite scores of students enrolled in developmental education ranged from 17.4, at Minnesota public two-year colleges, to 20.0 at the University of Minnesota. This compared to ACT scores for students not enrolled in developmental courses, ranging from 19.6, at private for-profit colleges, to 26.0, at the University of Minnesota.

Low ACT scores are one reason students can be placed into developmental education courses at the University of Minnesota and Minnesota State Universities.

**Chart 33. ACT Composite Score of Students Who Took Developmental Education by College Sector²¹:
Developmental Education Students Have Lower Average ACT Composite Scores**



²¹ Enrollment within two years of graduation for 2008-2014 graduates and within one year of graduation for 2015 graduates; data for 2015 graduates is considered preliminary and should not be used in trend analysis.

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