



What's Happening

October 2016

Investigating developmental and college-level course enrollment and passing before and after Florida's developmental education reform

Shouping Hu
Toby J. Park
Chenoa S. Woods
David A. Tandberg
Keith Richard
Dava Hankerson
Florida State University

Key findings

After developmental education became optional for qualified students entering a Florida College System institution for the first time in fall 2014:

- A smaller percentage of students enrolled in developmental education courses than in previous years.
- Passing rates in developmental education courses in math, reading, and writing increased an average of 2 percentage points compared with fall 2013.
- More students enrolled in gateway (entry-level college credit-bearing) courses, but passing rates in these courses declined compared with previous years, with the largest decline occurring in intermediate algebra.
- The proportion of all students entering college for the first time who passed English and math gateway courses increased compared with previous years.

U.S. Department of Education

John B. King, Jr., *Secretary*

Institute of Education Sciences

Ruth Neild, *Deputy Director for Policy and Research*

Delegated Duties of the Director

National Center for Education Evaluation and Regional Assistance

Joy Lesnick, *Acting Commissioner*

Amy Johnson, *Action Editor*

Sandra Garcia, *Project Officer*

REL 2017–203

The National Center for Education Evaluation and Regional Assistance (NCEE) conducts unbiased large-scale evaluations of education programs and practices supported by federal funds, provides research-based technical assistance to educators and policymakers, and supports the synthesis and widespread dissemination of the results of research and evaluation throughout the United States.

October 2016

This report was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-12-C-0011 by Regional Educational Laboratory Southeast administered by Florida Center for Reading Research, Florida State University. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

This REL report is in the public domain. While permission to reprint this publication is not necessary, it should be cited as:

Hu, S., Park, T. J., Woods, C. S., Tandberg, D. A., Richard, K., & Hankerson, D. (2016). *Investigating developmental and college-level course enrollment and passing before and after Florida's developmental education reform* (REL 2017–203). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southeast. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

This report is available on the Regional Educational Laboratory website at <http://ies.ed.gov/ncee/edlabs>.

Summary

Developmental education courses in college—defined as classes taken in college that are below college level (Bautsch, 2013)—have come under increased scrutiny in recent years. Concerns focus on the large number of students enrolled in developmental education courses, the high cost of providing them, and the low success rates among students who enroll in them. These issues are not unique to Florida; state legislatures across the country struggle in promoting student attainment of education credentials through developmental education (Parker, Barrett, & Bustillos, 2014).

Before 2014, Florida students entering a Florida College System institution were required to take placement exams and, if they did not score high enough, to take developmental education courses. Under Senate Bill 1720 of 2013, which was implemented in the fall of 2014, students who entered grade 9 in a Florida public school in the 2003/04 school year or later and earned a Florida standard high school diploma and students who are serving as an active duty member of any branch of the U.S. Armed Forces cannot be required to take a placement test and cannot be required to enroll in developmental education courses.

This report describes changes in student enrollment and passing rates in developmental education and gateway courses (introductory math and English courses that are required as prerequisites for other college-level courses) in fall 2014, when developmental education became optional for recent high school graduates and active duty members of the military entering college for the first time. It summarizes patterns in enrollment and course passing rates by subject and student demographic characteristic in the 2011–14 fall semesters, with a focus on fall 2013 and fall 2014, the two fall semesters immediately before and after the legislation was implemented.

The key findings from this descriptive study include:

- In fall 2014 a smaller percentage of students enrolled in developmental education courses, particularly in math, than in previous years.
- From fall 2013 to fall 2014 passing rates in developmental education courses increased an average of 2 percentage points in math, reading, and writing.
- Enrollment in gateway courses increased in fall 2014. Passing rates in gateway courses were relatively stable between fall 2011 and fall 2013 but declined in fall 2014, with the largest decline occurring in intermediate algebra.
- The proportion of students entering college for the first time who passed English and math gateway courses increased in fall 2014 compared with previous years.

Contents

Summary	i
Why this study?	1
What the study examined	2
What the study found	3
Patterns in enrollment rates in developmental education courses	3
Patterns in passing rates in developmental education courses	7
Patterns in enrollment rates in gateway courses	9
Patterns in passing rates in gateway courses	11
Proportion of students in each cohort who pass a gateway course	14
Implications of the study findings	16
Limitations of the study	17
Appendix A. Data and methodology	A-1
Appendix B. Additional results	B-1
References	Ref-1
Figures	
1 From fall 2013 to fall 2014 enrollment rates in all developmental education subjects in Florida College System institutions declined among students entering college for the first time	4
2 From fall 2013 to fall 2014 the enrollment rate in developmental math courses in Florida College System institutions declined among all racial/ethnic groups of students entering college for the first time	5
3 From fall 2013 to fall 2014 the enrollment rate in developmental math courses in Florida College System institutions declined more among students younger than age 25 entering college for the first time than among students ages 25 and older entering college for the first time	5
4 From fall 2013 to fall 2014 the enrollment rate in developmental reading courses in Florida College System institutions declined more among students younger than age 25 entering college for the first time than among students ages 25 and older entering college for the first time	6
5 From fall 2013 to fall 2014 the enrollment rate in developmental writing courses in Florida College System institutions declined among students younger than age 25 entering college for the first time but increased among students ages 25 and older entering college for the first time	6
6 From fall 2013 to fall 2014 passing rates in all developmental education subjects in Florida College System institutions increased among students entering college for the first time	7
7 From fall 2013 to fall 2014 the passing rate in developmental math courses in Florida College System institutions increased among all racial/ethnic groups of students entering college for the first time	8

8	From fall 2013 to fall 2014 the gap in passing rates in developmental math courses in Florida College System institutions between younger and older students entering college for the first time declined	8
9	From fall 2013 to fall 2014 enrollment rates in gateway courses in Florida College System institutions increased among students entering college for the first time	9
10	From fall 2013 to fall 2014 the enrollment rate in English composition 1 in Florida College System institutions increased most among Black students entering college for the first time	10
11	From fall 2013 to fall 2014 the enrollment rate in English composition 1 in Florida College System institutions increased among students younger than age 25 entering college for the first time but not among students ages 25 and older entering college for the first time	10
12	From fall 2013 to fall 2014 passing rates in gateway courses in Florida College System institutions declined among students entering college for the first time	11
13	From fall 2013 to fall 2014 the passing rate in English composition 1 in Florida College System institutions declined most among Black students entering college for the first time	12
14	From fall 2013 to fall 2014 passing rates in intermediate algebra in Florida College System institutions declined among Black, Hispanic, and White students entering college for the first time	12
15	From fall 2011 to fall 2014 passing rates in English composition 1 in Florida College System institutions were stable among students younger than age 25 entering college for the first time and students ages 25 and older entering college for the first time	13
16	From fall 2011 to fall 2014 passing rates in intermediate algebra in Florida College System institutions among students entering college for the first time varied by student age	13
17	From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed a gateway course in Florida College System institutions increased	14
18	From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed English composition 1 in Florida College System institutions increased among all racial/ethnic groups	15
19	From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed intermediate algebra in Florida College System institutions increased among all racial/ethnic groups	15
20	From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed English composition 1 in Florida College System institutions increased more among students younger than age 25 than among students ages 25 and older	16

Tables

B1	Fall enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by subject, 2011–14	B-1
B2	Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14	B-1
B3	Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by gender and subject, 2011–14	B-3
B4	Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by age and subject, 2011–14	B-4
B5	Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by subject, 2011–14	B-4
B6	Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14	B-5

B7	Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by gender and subject, 2011–14	B-7
B8	Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by age and subject, 2011–14	B-8
B9	Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by course, 2011–14	B-8
B10	Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and course, 2011–14	B-9
B11	Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by gender and course, 2011–14	B-11
B12	Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by age and course, 2011–14	B-12
B13	Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by course, 2011–14	B-12
B14	Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and course, 2011–14	B-13
B15	Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by gender and course, 2011–14	B-15
B16	Passing patterns in gateway courses in Florida College System institutions, by age and course, 2011–14	B-16
B17	Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by course 2011–14	B-16
B18	Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by race/ethnicity and course, 2011–14	B-17
B19	Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by gender and course, 2011–14	B-19
B20	Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by age and course, 2011–14	B-20

Why this study?

Developmental education courses in postsecondary education—defined as classes taken in college that are below college level (Bautsch, 2013)—have come under increased scrutiny. Concerns focus on the large number of students enrolled in developmental education courses, the high costs of providing these courses, and the low success rate among students who enroll in them. More than half of community college students in the United States enroll in at least one developmental course (Bailey, Jeong, & Cho, 2010). More generally, in 2007/08, 1.7 million students entering a college or university for the first time (roughly 36 percent) enrolled in at least one developmental education course (Fulton, Gianneschi, Blanco, & DeMaria, 2014; U.S. Department of Education, 2010). It cost more than \$3 billion to offer those courses (Alliance for Excellent Education, 2011).

In Florida alone 70 percent of students entering community college for the first time enrolled in at least one developmental education course during the 2009/10 academic year, at a cost to the state of \$81 million (Underhill, 2013). Despite the expenditure of state resources on the developmental education effort, only a small fraction of students who take developmental education courses actually receive a degree (Complete College America, 2012).

The Florida College System—which comprises 28 state colleges (formerly community colleges) on 68 campuses that offer bachelor’s degrees, associate’s degrees, postsecondary certificates, and continuing education programs to an estimated 900,000 students (Florida College System, 2014)—is seeking initial information on patterns in student enrollment and passing rates in developmental education courses after recent reforms in the state. Florida College System staff intend to share this information with member institutions that may be looking to improve placement practices on their campuses. The study’s findings may inform policymakers and college administrators in Florida and nationwide of the potential for enacting broader developmental education policies. The study may also lead to future research, including follow-up studies of students’ progress and success in developmental education and college-level courses.

In 2013 the Florida legislature passed Senate Bill 1720, which restructured developmental education placement and instruction, changing developmental education programs and practices across the Florida College System (Hu, Bertrand Jones, et al., 2015; Hu, Park, et al., 2015). The law, which was implemented in fall 2014, stipulates that students who entered grade 9 in a Florida public school in the 2003/04 school year or later and earn a Florida standard high school diploma and students who are serving as an active duty member of any branch of the U.S. Armed Forces cannot be required to take a placement test and cannot be required to enroll in a developmental education course in a Florida College System institution.

While Senate Bill 1720 targeted developmental education, it also has implications for student progression into and out of gateway courses (introductory math and English courses that are required as prerequisites for other college-level courses). Students who opt out of developmental education courses can enroll directly in gateway courses, so enrollment and passing rates in gateway courses are likely to be affected by the legislation.

This study provides initial information on patterns in student enrollment and passing rates in developmental education courses after recent reforms in the state for policymakers and college administrators in Florida who may be looking to improve placement practices on their campuses

Policymakers and college administrators are interested in how Senate Bill 1720 may affect students of different backgrounds, including different racial/ethnic and gender groups. In addition, because the law applies to students in grade 9 in 2003/04 or later, older students who are not exempt from developmental education may show enrollment patterns that differ from those of younger students after the legislation was implemented.

This study was conducted in partnership with the Florida Department of Education and the Florida College System. Staff from the Florida College System, which is part of the Florida Department of Education, partnered with staff from Regional Educational Laboratory Southeast to conduct these analyses to provide an early description of changes in the first semester of implementation

What the study examined

The study examined patterns in enrollment and passing rates in both developmental education and gateway courses for four fall semester cohorts of students in the Florida College System who were entering college for the first time from 2011 through 2014. The fall semester was selected for two reasons. First, fall 2014 was the implementation deadline established in the statute of Senate Bill 1720. Second, data for spring 2015 were not available at the time of the study, so it was not possible to compare both fall and spring semester data from prior years with 2014/15 data. The fall semesters represented the only semesters with data available before and after the enactment of the law.

Although four years of data are available, analyses focus on fall 2013 and fall 2014—the fall semesters immediately before and after Senate Bill 1720 was implemented.

Three research questions guided the study:

- What are the patterns in enrollment and passing rates in developmental education courses in English and math before and after the reform and by subject and student demographic characteristics (race/ethnicity, age, and gender) in the 2011–14 fall semesters?
- What are the patterns in enrollment and passing rates in gateway courses in the 2011–14 fall semesters over time and by subject and student demographic characteristic?
- What proportion of students entering college for the first time in each cohort passed a gateway course in the fall semester of a given year?

Each cohort in the analyses contained approximately 65,000–72,500 students. Students attending Florida College System institutions have an average age of 26, with 63 percent attending college part time and 37 percent attending full time (Florida Department of Education, n.d.). Student race/ethnicity, gender, and age were similar across all of the cohorts (see tables B1 and B2). See appendix A for a description of the data and methods.

Results are examined for Florida's three largest racial/ethnic groups: Black students (includes African American), Hispanic students (includes Latino), and White students. Black and Hispanic students in Florida and elsewhere are disproportionately more likely to enroll in a developmental education course than White students. Thus, any consequences of Senate Bill 1720 would disproportionately affect Black and Hispanic students. In addition, the legislation applies to students in grade 9 in 2003/04 or later, meaning

The study examined patterns in enrollment and passing rates in developmental education and gateway courses for four fall semester cohorts of students in the Florida College System who were entering college for the first time in 2011–14, with a focus on fall 2013 and fall 2014—the fall semesters immediately before and after Senate Bill 1720 was implemented

that younger students (those younger than age 25 when the law was implemented in fall 2014) were exempt from having to demonstrate readiness for college but older students (those ages 25 and older) were not. Examining the outcomes by age can highlight changes associated with the reform because both groups enrolled in the same semesters, but their enrollment was under different rules in fall 2014.

Three patterns in enrollment and passing rates in developmental education courses were explored: one for reading, one for writing, and one for math. Three patterns were also explored in gateway courses. The first two patterns are in individual courses: English composition 1 (for reading and writing) and intermediate algebra (the most common math gateway course). Because there are a variety of other math and statistics gateway courses, the third pattern is a composite of all math courses that can serve as gateway courses, including intermediate algebra (see appendix A for a full description of these courses).

The proportion of all students in each cohort who passed a given gateway course offers another way to examine patterns in passing rates in gateway courses. In this case the denominator is the total number of students in the cohort (rather than the total number of students enrolled in gateway courses). This analysis is important because the overall goal for the state is not simply to have more students take gateway courses but to ensure that more students succeed in them and progress to upper level courses by allowing exempt students to enroll in gateway courses without first taking developmental education courses.

When results are consistent across subjects, only one subject is discussed, but additional results, including breakdowns by gender, are provided in appendix B.

Finally, this report is descriptive in nature; it does not evaluate the causal impact of the reform.

Examining the outcomes by age can highlight changes associated with the reform because both younger and older students enrolled in the same semesters, but their enrollment was under different rules in fall 2014

What the study found

The study found changes in enrollment and passing rates in developmental education and gateway courses in the fall 2014 semester compared with fall semesters in previous years. The study findings are organized into five sections:

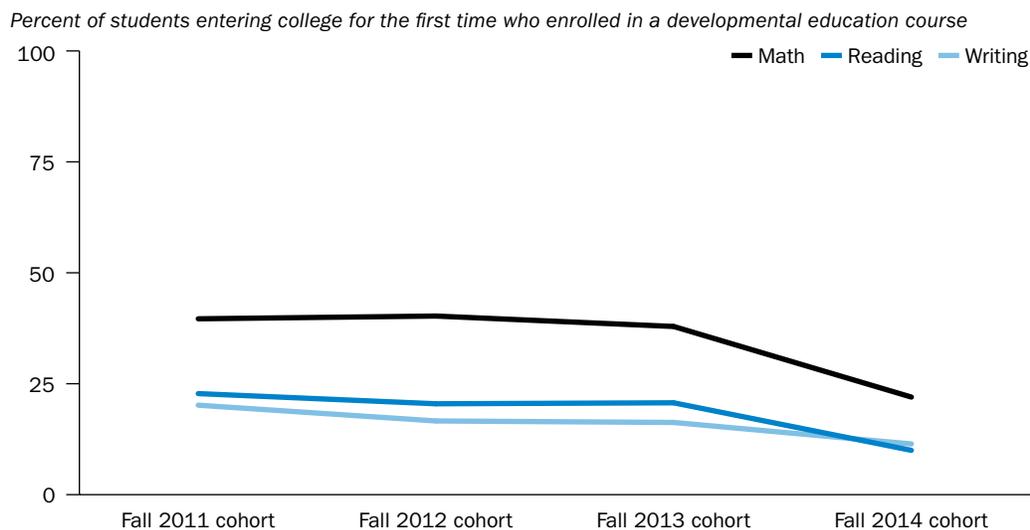
- Patterns in enrollment rates in developmental education courses.
- Patterns in passing rates in developmental education courses.
- Patterns in enrollment rates in gateway courses.
- Patterns in passing rates in gateway courses.
- Proportion of all students in each cohort who passed a gateway course.

Patterns in enrollment rates in developmental education courses

This section describes patterns in enrollment rates in developmental education courses by subject and by student race/ethnicity and age. Results by gender are provided in appendix B.

Overall enrollment rates. After enrollment in developmental education became optional, enrollment rates in developmental education courses were lower than in previous years (figure 1). The overall enrollment rate in developmental math declined from 38 percent in fall 2013 to 22 percent in fall 2014. The overall enrollment rate in developmental reading declined from 21 percent in fall 2013 to 10 percent in fall 2014. And the overall enrollment

Figure 1. From fall 2013 to fall 2014 enrollment rates in all developmental education subjects in Florida College System institutions declined among students entering college for the first time



Note: See table B1 in appendix B for numbers of students.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

The overall enrollment rate declined from 38 percent in fall 2013 to 22 percent in fall 2014 in developmental math, from 21 percent in fall 2013 to 10 percent in fall 2014 in developmental reading, and from 16 percent in fall 2013 to 11 percent in fall 2014 in developmental writing

rate in developmental writing declined from 16 percent in fall 2013 to 11 percent in fall 2014 (see table B1 in appendix B).

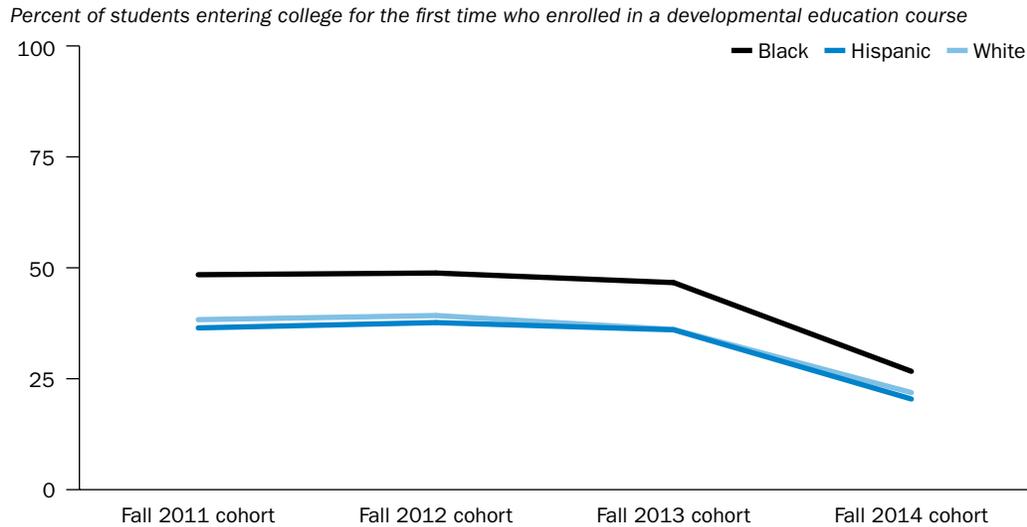
Enrollment rates by race/ethnicity. Black students had the largest decline in the enrollment rate for developmental education courses across all subjects. Forty-seven percent of Black students enrolled in a developmental math course in 2013, compared with 27 percent in fall 2014, a decline of 20 percentage points (figure 2). The corresponding decline was 16 percentage points among Hispanic students and 14 percentage points among White students. The pattern was similar in developmental reading and writing (see table B2 in appendix B).

Enrollment rates by age. Across all three subjects the percentage of students enrolled in a developmental education course declined more among younger students when it became optional for them. The enrollment rate in developmental math courses declined from 38 percent in fall 2013 to 21 percent in fall 2014 among younger students and from 37 percent in fall 2013 to 33 percent in fall 2014 among older students (figure 3).

The enrollment rate in developmental reading courses declined from 21 percent in fall 2013 to 9 percent in fall 2014 among younger students and from 18 percent in fall 2013 to 15 percent in fall 2014 among older students (figure 4).

Before fall 2014 younger students enrolled in developmental writing courses at a higher rate than older students did, but this changed when enrollment in developmental education courses became optional for younger students. Specifically, 17 percent of younger students enrolled in fall 2013, and 11 percent enrolled in fall 2014, whereas 11 percent of older students enrolled in fall 2013, increasing to 13 percent in fall 2014 (figure 5; see also table B4).

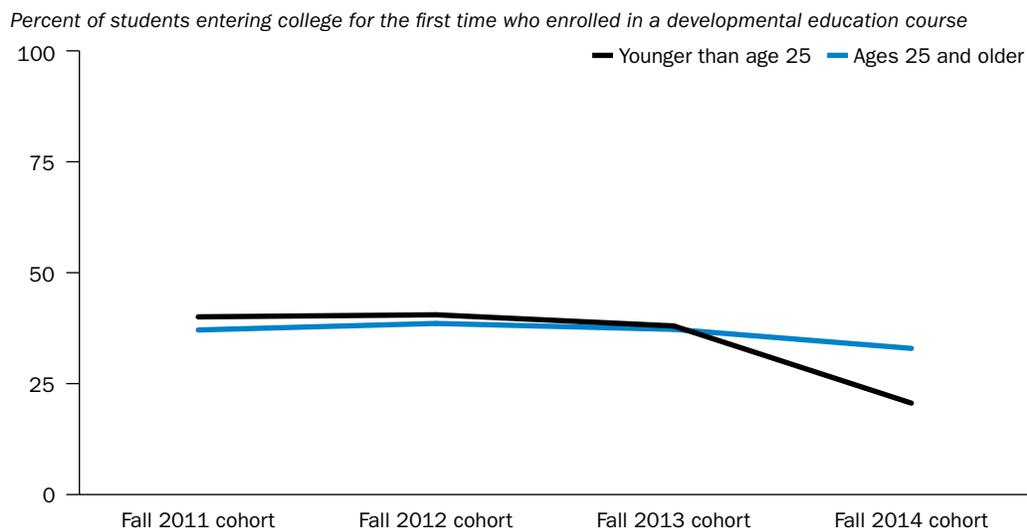
Figure 2. From fall 2013 to fall 2014 the enrollment rate in developmental math courses in Florida College System institutions declined among all racial/ethnic groups of students entering college for the first time



Note: See table B2 in appendix B for numbers of students and results for reading and writing.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

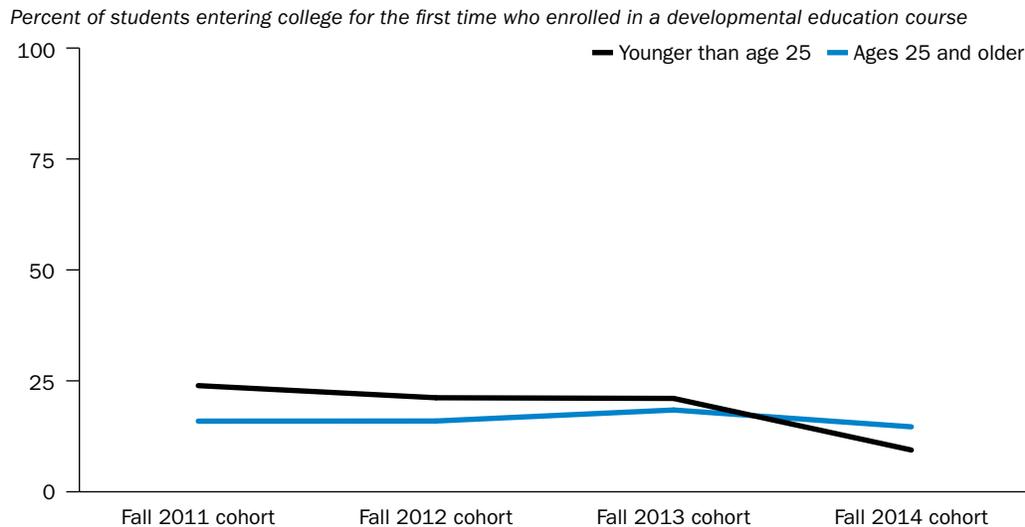
Figure 3. From fall 2013 to fall 2014 the enrollment rate in developmental math courses in Florida College System institutions declined more among students younger than age 25 entering college for the first time than among students ages 25 and older entering college for the first time



Note: See table B4 in appendix B for numbers of students and results for reading and writing.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

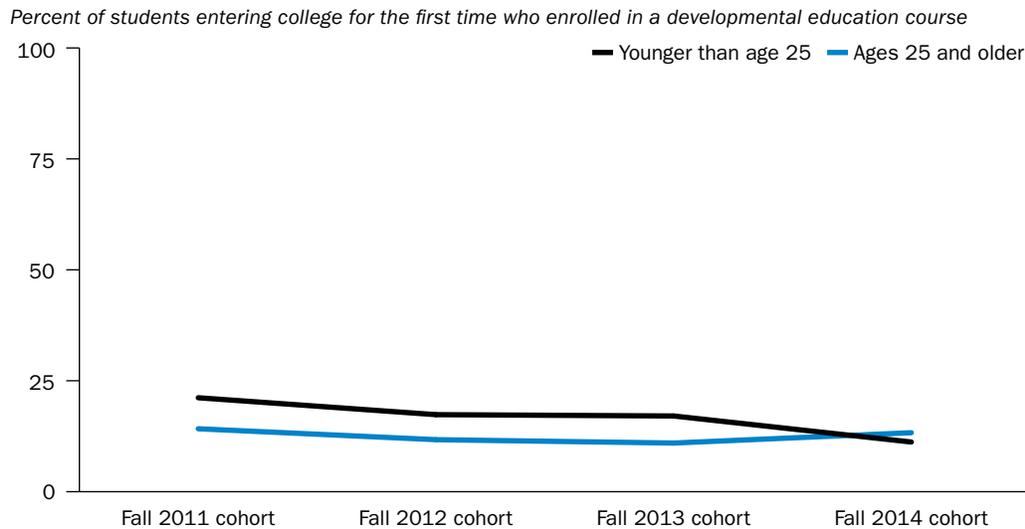
Figure 4. From fall 2013 to fall 2014 the enrollment rate in developmental reading courses in Florida College System institutions declined more among students younger than age 25 entering college for the first time than among students ages 25 and older entering college for the first time



Note: See table B4 in appendix B for numbers of students and results for math and writing.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Figure 5. From fall 2013 to fall 2014 the enrollment rate in developmental writing courses in Florida College System institutions declined among students younger than age 25 entering college for the first time but increased among students ages 25 and older entering college for the first time



Note: See table B2 in appendix B for numbers of students and results for math and reading.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Patterns in passing rates in developmental education courses

This section describes the patterns in passing rates in developmental education courses by subject and by student race/ethnicity and age. Results by gender are provided in appendix B. For these analyses passing is defined as earning a C or better, which is the target grade used by the Florida College System.

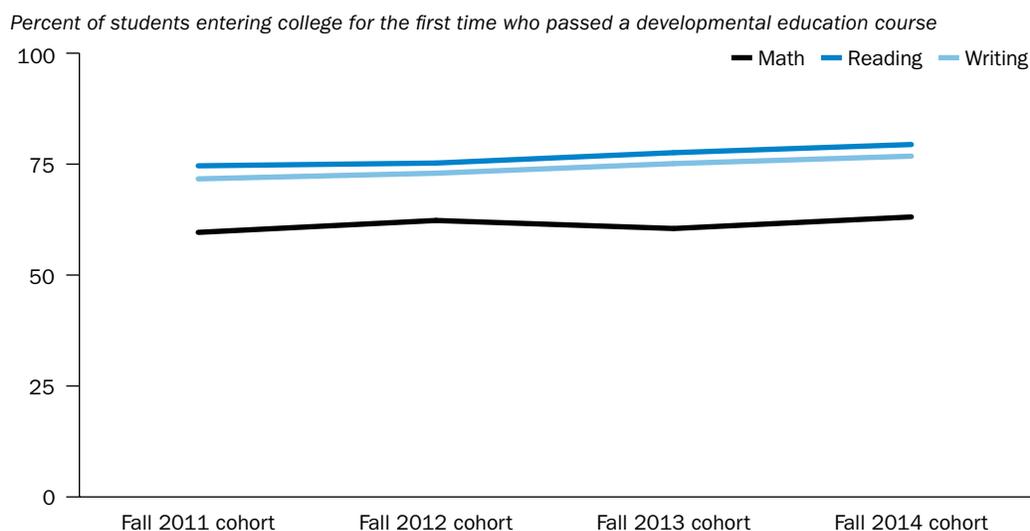
Overall passing rates. Overall passing rates for developmental education courses increased an average of 2 percentage points across the three subjects from fall 2013 to fall 2014 (figure 6; see also table B5 in appendix B). The passing rate in developmental math courses declined from fall 2012 to fall 2013 but increased from fall 2013 to fall 2014, while the passing rate in developmental reading courses and developmental writing increased from fall 2011 to fall 2014.

Passing rates by race/ethnicity. Passing rates in developmental math courses increased from fall 2013 to fall 2014 by 3 percentage points among Black students and by 4 percentage points among Hispanic students (figure 7). The pattern was similar in writing while in reading, passing rates increased among Black students but declined slightly among Hispanic students (see table B6 in appendix B).

Passing rates by age. Older students consistently had higher passing rates in developmental math courses than younger students did, though the rates began to converge in fall 2014 (figure 8). The passing rate in developmental math courses in fall 2013 was 59 percent among younger students and 70 percent among older students; in fall 2014, the passing rate had increased among younger students, to 62 percent, and declined among older students, to 67 percent. For reading and writing courses passing rates increased among both older and younger students from fall 2013 to fall 2014 (see table B8 in appendix B).

Overall passing rates for developmental education courses increased an average of 2 percentage points across the three subjects from fall 2013 to fall 2014

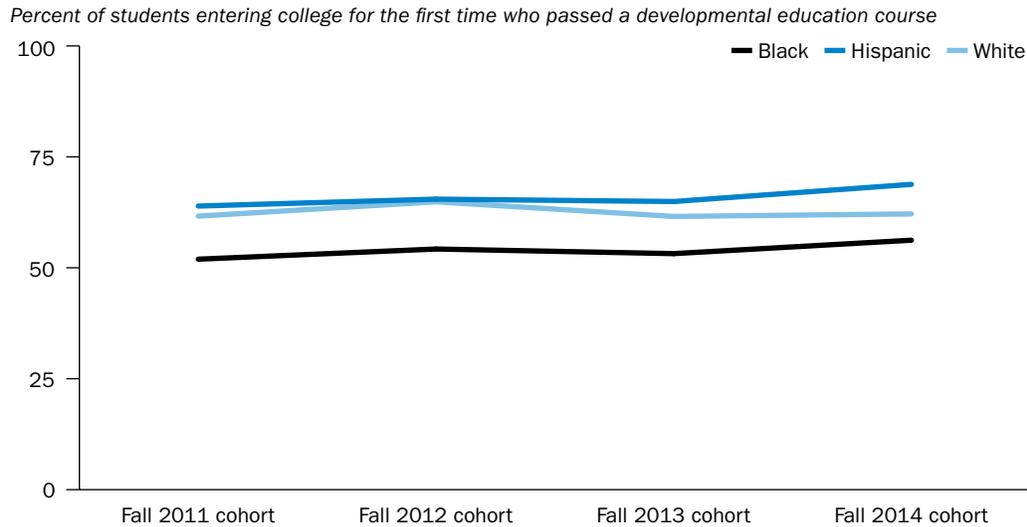
Figure 6. From fall 2013 to fall 2014 passing rates in all developmental education subjects in Florida College System institutions increased among students entering college for the first time



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B5 in appendix B for numbers of students.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

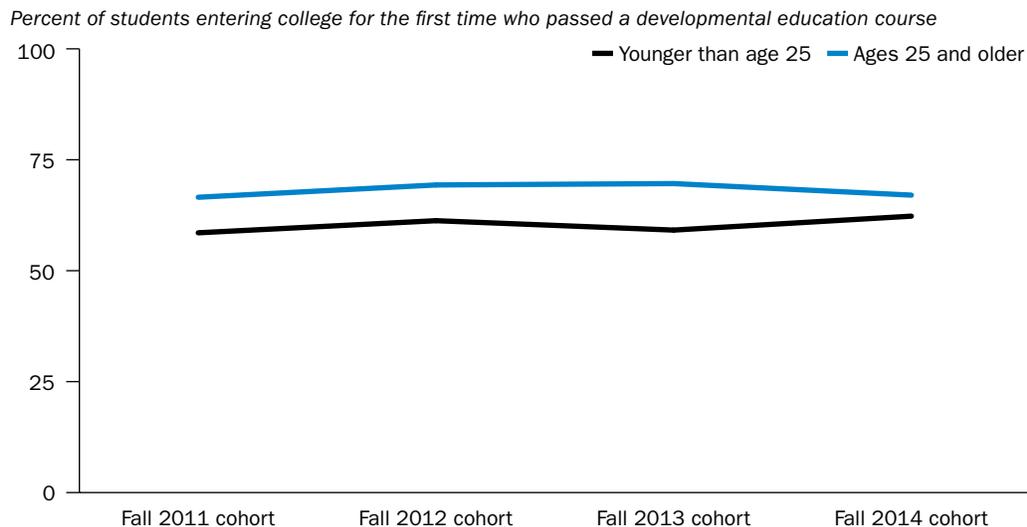
Figure 7. From fall 2013 to fall 2014 the passing rate in developmental math courses in Florida College System institutions increased among all racial/ethnic groups of students entering college for the first time



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B6 in appendix B for numbers of students and results for reading and writing.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Figure 8. From fall 2013 to fall 2014 the gap in passing rates in developmental math courses in Florida College System institutions between younger and older students entering college for the first time declined



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B8 in appendix B for numbers of students and results for reading and writing.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Patterns in enrollment rates in gateway courses

This section describes patterns in enrollment rates in gateway courses by subject and by student race/ethnicity and age. Results by gender are provided in appendix B.

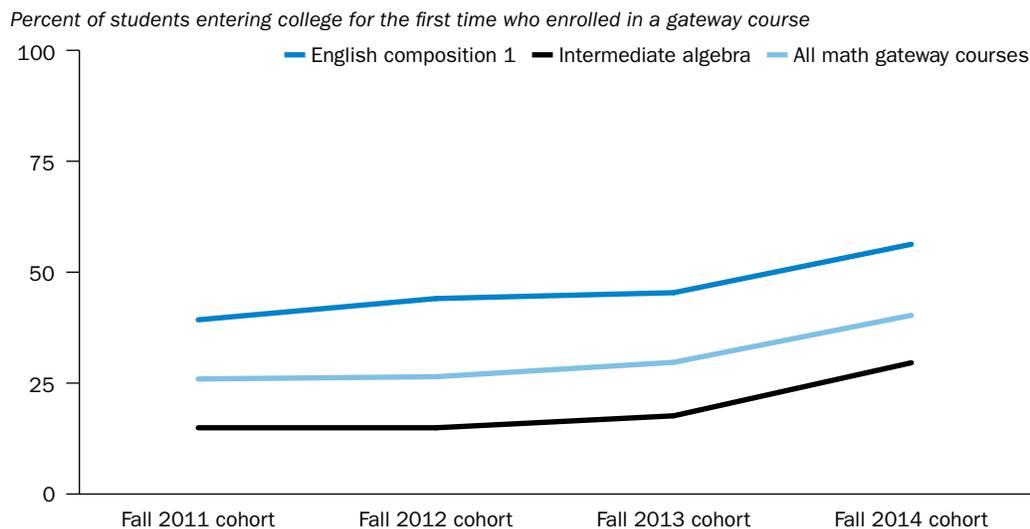
Overall enrollment rates. After enrollment in developmental education became optional in fall 2014, enrollment rates in gateway courses increased in English composition 1, intermediate algebra, and all math gateway courses combined (figure 9; see also table B9 in appendix B).

Enrollment rates by race/ethnicity. Enrollment rates in gateway courses among Black, Hispanic, and White students increased from fall 2011 to fall 2014 in English composition 1, intermediate algebra, and all math gateway courses combined, with Black student enrollment increasing the most. From fall 2013 to fall 2014 the enrollment rate in English composition 1 increased 18 percentage points among Black students, 11 percentage points among Hispanic students, and 8 percentage points among White students (figure 10). The pattern was similar in intermediate algebra and all math gateway courses combined (see table B10 in appendix B).

Enrollment rates by age. Younger students consistently enrolled in gateway courses at higher rates than older students did. From fall 2013 to fall 2014 enrollment rates in English composition 1 were stable among students ages 25 and older but increased 12 percentage points among younger students (figure 11). The pattern is similar in intermediate algebra and all math gateway courses combined (see table B12 in appendix B).

After enrollment in developmental education became optional in fall 2014, enrollment rates in gateway courses increased in English composition 1, intermediate algebra, and all math gateway courses combined

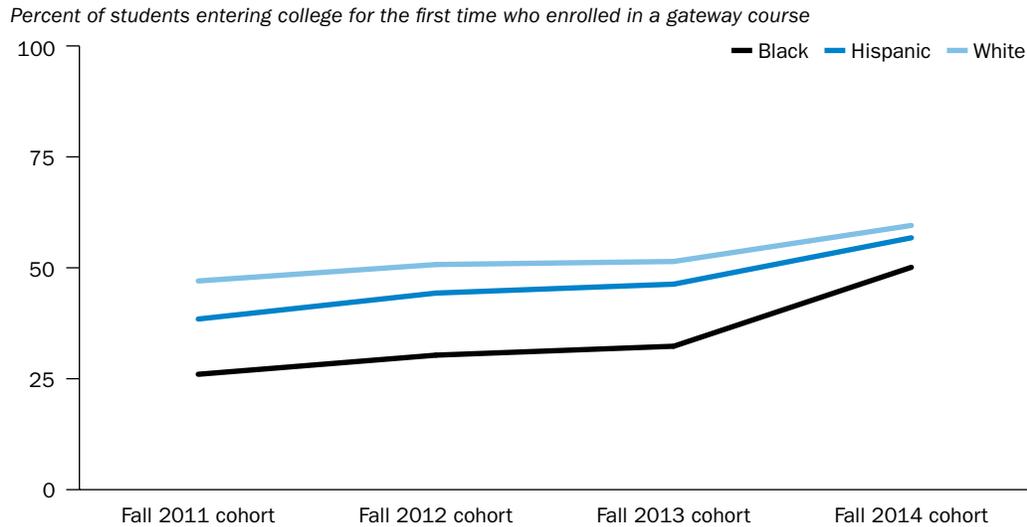
Figure 9. From fall 2013 to fall 2014 enrollment rates in gateway courses in Florida College System institutions increased among students entering college for the first time



Note: See table B9 in appendix B for numbers of students.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

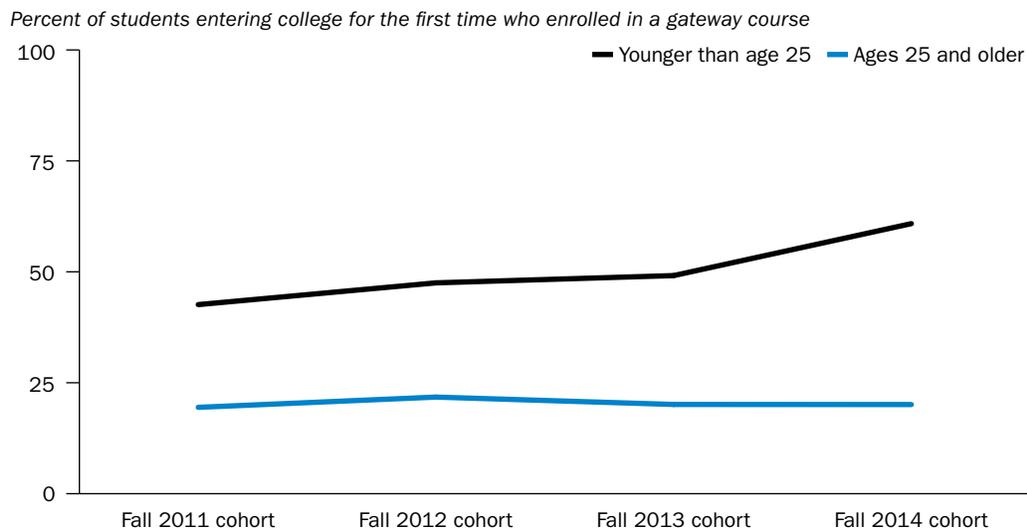
Figure 10. From fall 2013 to fall 2014 the enrollment rate in English composition 1 in Florida College System institutions increased most among Black students entering college for the first time



Note: See table B10 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Figure 11. From fall 2013 to fall 2014 the enrollment rate in English composition 1 in Florida College System institutions increased among students younger than age 25 entering college for the first time but not among students ages 25 and older entering college for the first time



Note: See table B12 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Patterns in passing rates in gateway courses

This section describes patterns in passing rates in gateway courses by subject and by student race/ethnicity and age. Results by gender are provided in appendix B.

Overall patterns. Passing rates in gateway courses were stable from fall 2011 to fall 2013 but declined from fall 2013 to fall 2014, with the largest decline in intermediate algebra (figure 12; see also table B13 in appendix B).

Passing rates by race/ethnicity. Changes in passing rates in gateway course rates varied by student race/ethnicity. Passing rates in English composition 1 among Black students increased from fall 2011 to fall 2013 but declined 5 percentage points from fall 2013 to fall 2014, whereas passing rates among Hispanic and White students were stable from fall 2011 to fall 2013 but declined slightly from fall 2013 to fall 2014 (figure 13).

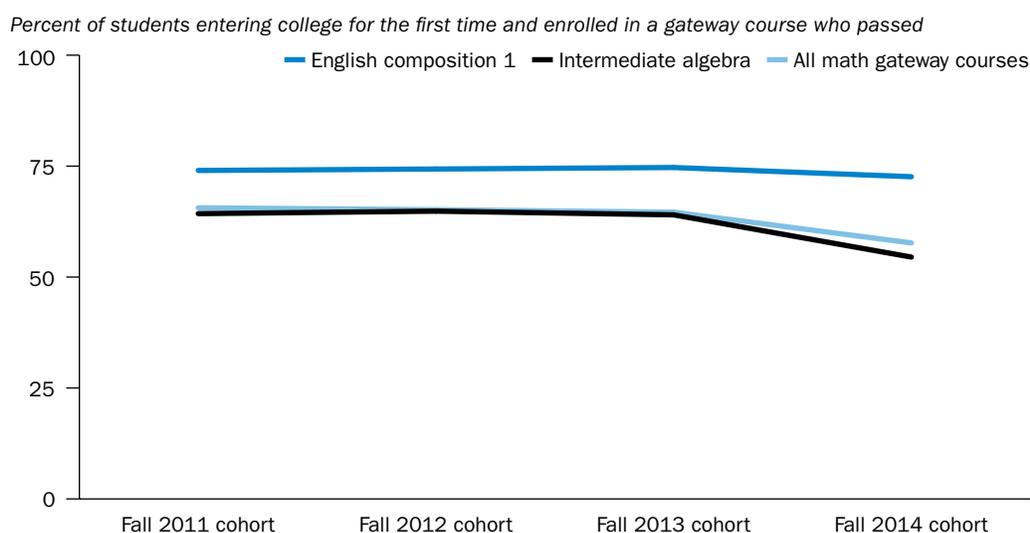
Declines of 9–10 percentage points in the passing rate in intermediate algebra from fall 2013 to fall 2014 occurred among students of all races/ethnicities (figure 14). The pattern is similar in all math gateway courses combined (see table B14 in appendix B).

Passing rates by age. Passing rates in English composition 1 were stable from fall 2011 to fall 2014 among younger and older students (figure 15).

Passing rates in intermediate algebra varied by age. From fall 2013 to fall 2014 passing rates declined among students of both age groups, though older students saw a larger decline (15 percentage points compared with 9 percentage points; figure 16). The pattern in all math gateway courses combined was similar (see table B16 in appendix B).

Passing rates in gateway courses were stable from fall 2011 to fall 2013 but declined from fall 2013 to fall 2014, with the largest decline in intermediate algebra

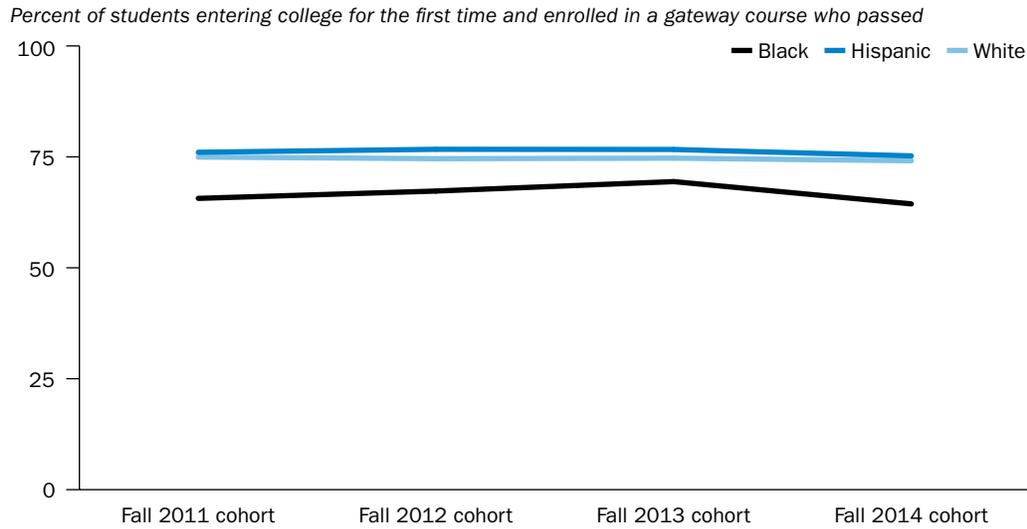
Figure 12. From fall 2013 to fall 2014 passing rates in gateway courses in Florida College System institutions declined among students entering college for the first time



Notes: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B13 in appendix B for numbers of students.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

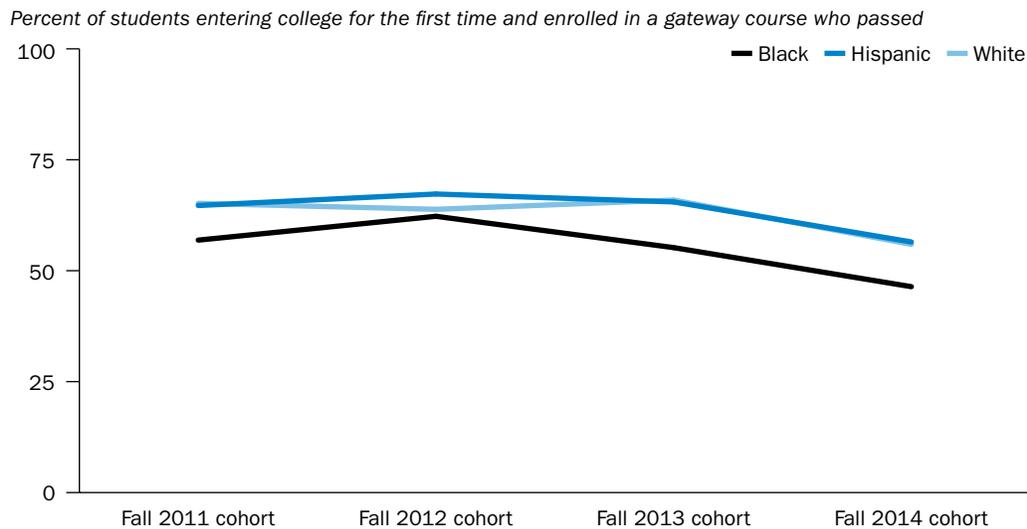
Figure 13. From fall 2013 to fall 2014 the passing rate in English composition 1 in Florida College System institutions declined most among Black students entering college for the first time



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B14 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

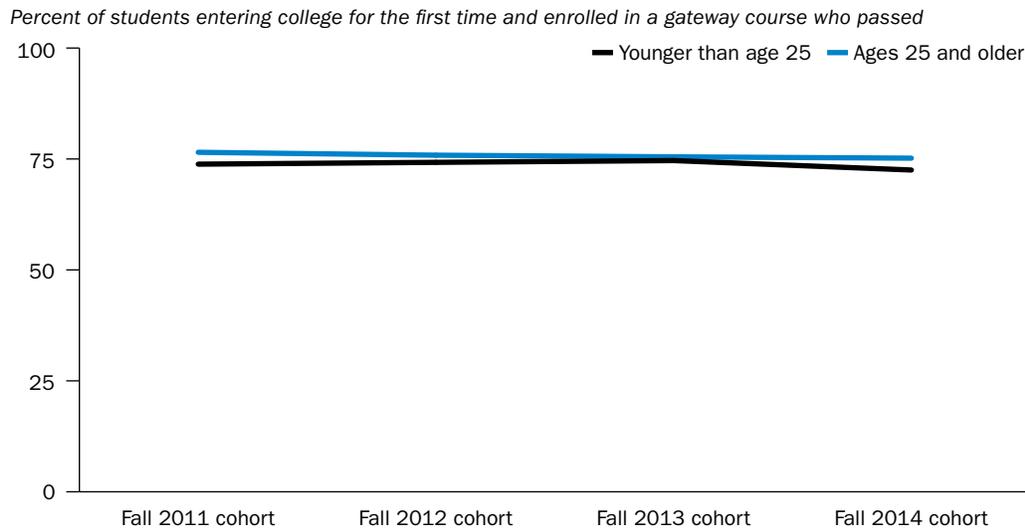
Figure 14. From fall 2013 to fall 2014 passing rates in intermediate algebra in Florida College System institutions declined among Black, Hispanic, and White students entering college for the first time



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B14 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

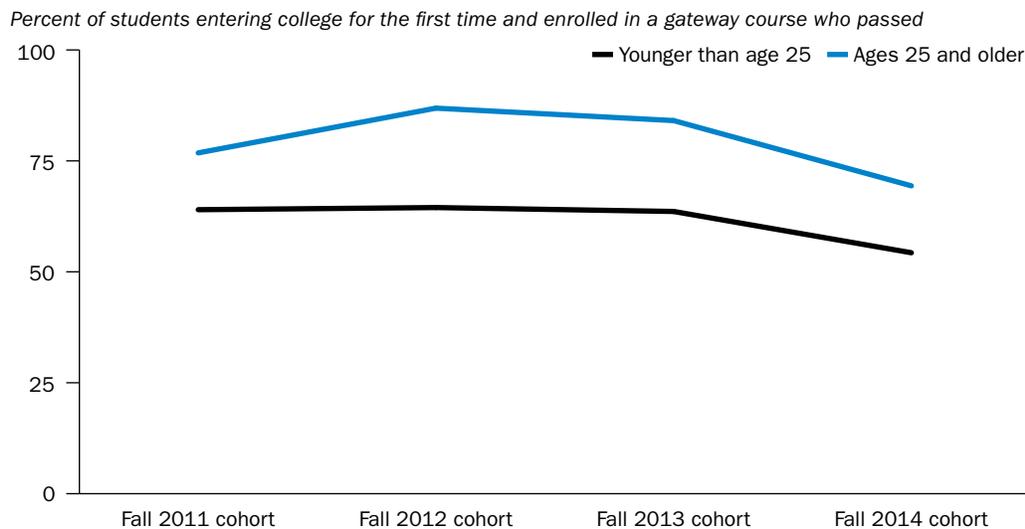
Figure 15. From fall 2011 to fall 2014 passing rates in English composition 1 in Florida College System institutions were stable among students younger than age 25 entering college for the first time and students ages 25 and older entering college for the first time



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B16 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Figure 16. From fall 2011 to fall 2014 passing rates in intermediate algebra in Florida College System institutions among students entering college for the first time varied by student age



Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course. See table B16 in appendix B for numbers of students and results for English composition 1 and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Proportion of students in each cohort who pass a gateway course

This section describes the proportion of all students in each cohort who passed a gateway course by subject and student demographic characteristics.

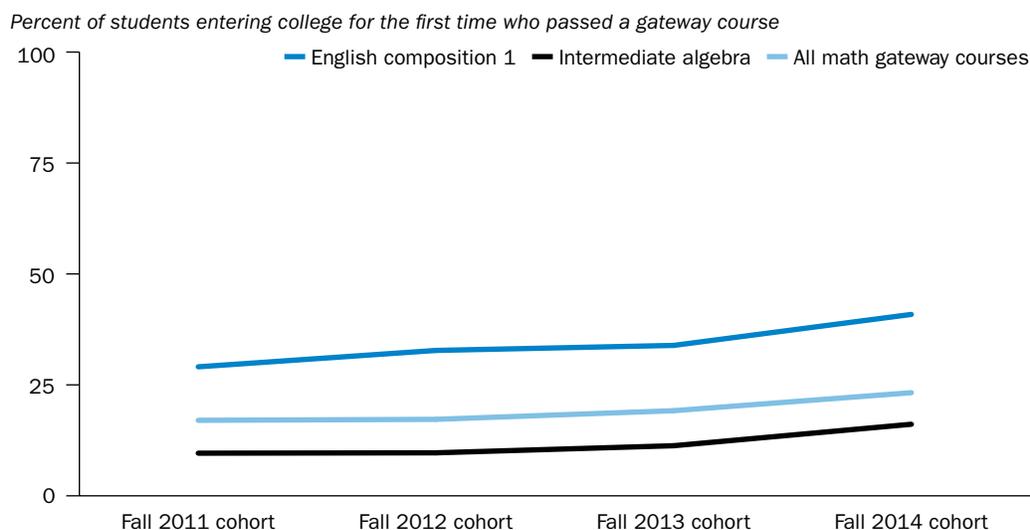
Overall proportion. From fall 2011 to fall 2014 the proportion of all students in each cohort who passed a gateway course increased, especially after Senate Bill 1720 was implemented in fall 2014 (figure 17). The increase was slight between fall 2011 and fall 2013: the largest increase was 5 percentage points from fall 2011 to fall 2013 in English composition. From fall 2013 to fall 2014 the proportion increased 7 percentage points in English composition 1, 5 percentage points in intermediate algebra, and 4 percentage points in all math gateway courses combined (see table B17 in appendix B).

Proportion by race/ethnicity. Black students had the largest increase in the proportion of all students in the cohort who passed English composition 1: 10 percentage points, from 22 percent in fall 2013 to 32 percent in fall 2014. The proportions of Hispanic and White students also increased, but the magnitudes were smaller (7 percentage points for Hispanic students and 6 percentage points among White students; figure 18).

Black students also had the largest increase in the proportion of all students in the cohort who passed intermediate algebra: 6 percentage points, from 7.4 percent in fall 2013 to 13.2 percent in fall 2014 (figure 19). The increase was similar among Hispanic students (5 percentage points) but smaller among White students (4 percentage points). The pattern was similar in all math gateway courses combined (see table B18 in appendix B).

From fall 2013 to fall 2014 the proportion of all students in each cohort who passed a gateway course increased 7 percentage points in English composition 1, 5 percentage points in intermediate algebra, and 4 percentage points in all math gateway courses combined

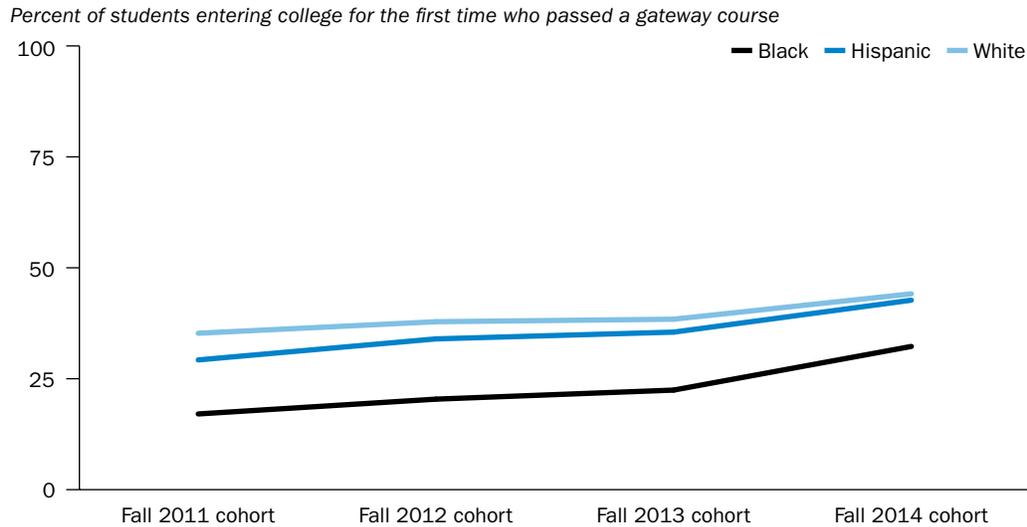
Figure 17. From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed a gateway course in Florida College System institutions increased



Note: The proportion of students who passed is calculated by dividing the number of students who earned a C or better in the course by the total number of students in the cohort. See table B17 in appendix B for numbers of students.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

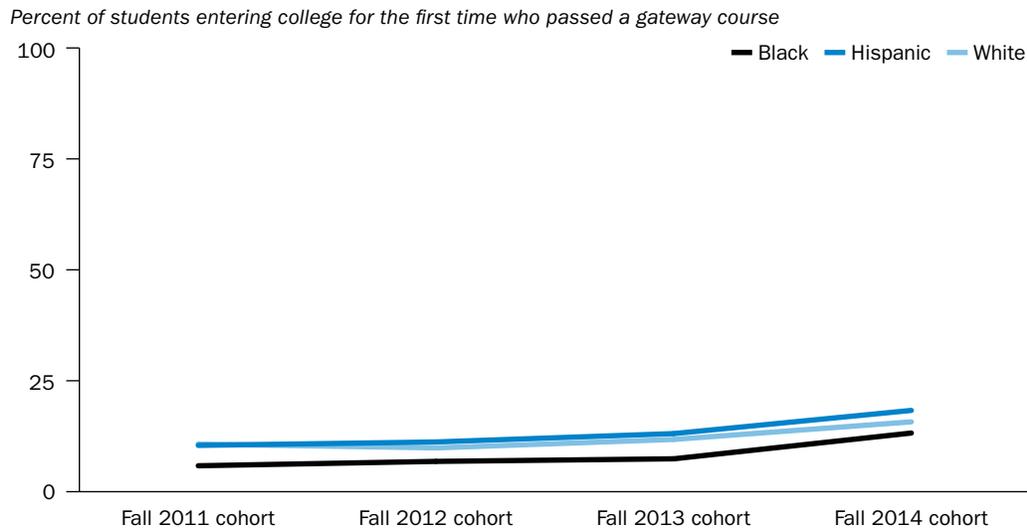
Figure 18. From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed English composition 1 in Florida College System institutions increased among all racial/ethnic groups



Note: The proportion of students who passed is calculated by dividing the number of students who earned a C or better in the course by the total number of students in the cohort. See table B18 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

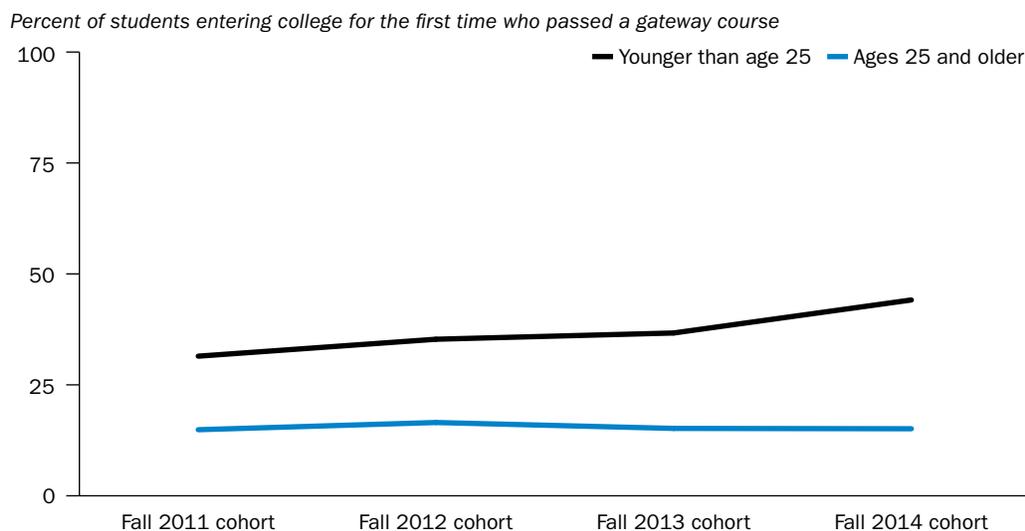
Figure 19. From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed intermediate algebra in Florida College System institutions increased among all racial/ethnic groups



Note: The proportion of students who passed is calculated by dividing the number of students who earned a C or better in the course by the total number of students in the cohort. See table B18 in appendix B for numbers of students and results for English composition 1 and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Figure 20. From fall 2013 to fall 2014 the proportion of all students entering college for the first time who passed English composition 1 in Florida College System institutions increased more among students younger than age 25 than among students ages 25 and older



Note: The proportion of students who passed is calculated by dividing the number of students who earned a C or better in the course by the total number of students in the cohort. See table B20 in appendix B for numbers of students and results for intermediate algebra and all math gateway courses combined.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

The percentage of students entering college for the first time and enrolling in developmental education courses declined from fall 2013 to fall 2014, which may be due to legislation that allows students to bypass developmental education courses

Proportion by age. The proportion of all students in each cohort who passed a gateway course was higher in fall 2014 than in fall 2013 among younger students but remained flat among older students. The proportion increased 7.4 percentage points from fall 2013 to fall 2014 among younger students, compared with a decrease of less than 0.1 percentage point among older students (figure 20). The pattern was similar in all math gateway courses combined (see table B20 in appendix B).

Implications of the study findings

The study explored data from four fall cohorts of students entering college for the first time in Florida College System institutions to understand patterns in enrollment and passing rates in developmental and gateway courses from 2011 through 2014. The results have implications for the ongoing deliberation of state developmental education policies.

The percentage of students entering college for the first time and enrolling in developmental education courses declined from fall 2013 to fall 2014, after Florida Senate Bill 1720 was implemented. The declines may be due to the fact that the legislation allows students to bypass developmental education courses. And because placement tests also became optional, students may have been less aware of their academic abilities and may have made enrollment decisions without guidance from placement scores. At the same time, the passing rates in developmental education courses increased an average of 2 percentage points across all three subjects.

In contrast, both the number and percentage of students entering college for the first time and enrolling in gateway courses increased after Florida Senate Bill 1720 was implemented. Enrollment in gateway courses may have increased because students who previously would have enrolled in developmental education courses bypassed those courses and enrolled directly in gateway courses. At the same time, passing rates in gateway courses declined, particularly in math courses. One possible explanation is that students who were under-prepared for such courses enrolled in them at a higher rate in 2014.

Finally, the proportion of all students in each cohort who passed a gateway course increased in all subjects from fall 2013 to fall 2014 even as passing rates declined. This indicates that the increased proportion of students enrolling in gateway courses offset the lower passing rates and produced more completers of gateway courses. At the same time, the racial/ethnic gap on this measure was narrower in fall 2014 than in previous years, particularly among Black students in English composition 1.

Reduced enrollment in developmental education and lower passing rates in gatekeeper courses are logical consequences of making developmental education optional. However, the increase in the proportion of all students who passed a gatekeeper course raises questions about the utility of developmental education and placement mechanisms. On the one hand, the increase in enrollment in gatekeeper courses offset the higher percentage of students failing those courses and resulted in more students completing those courses, at least in the first semester of the reform. While more semesters of data are required to reach firm conclusions, the logical extension is that developmental education, at least as practiced prior to the reform, was more of a barrier than a support in the aggregate.

On the other hand, some students are not prepared for gateway courses, especially in math, and developmental education may still be helpful for them. The challenge becomes accurately screening and placing students to minimize the number of students who could pass a gateway course taking a developmental course and the number of students who need a developmental course taking a gateway class (see Hughes and Petscher, 2016). This raises questions about placement procedures, cutscores for placement tests, and policies that mandate developmental education. Future research that follows this reform for multiple years may help answer such questions.

Limitations of the study

The study is limited because data were available only for fall 2014 and not for later semesters. Because of this, the study team could not assess longer term outcomes such as trends following the first semester of the implementation of Florida Senate Bill 1720. Future analyses of longitudinal data could help compare trends before and after implementation, examining, for example, longer term student outcomes such as persistence and completion of education credentials. Additionally, student-level variables such as high school preparation or grades were unavailable for the fall 2014 cohort of students entering college for the first time. That information might provide a better understanding of how background characteristics are related to enrollment and passing rates in developmental education and gateway courses, both before and after implementation of Senate Bill 1720.

The increased proportion of students enrolling in gateway courses offset the lower passing rates and produced more completers of gateway courses, which suggests that developmental education, at least as practiced prior to the reform, was more of a barrier than a support in the aggregate

Appendix A. Data and methodology

This appendix describes the data and methodology used in the study.

Data

Data are from the Florida Department of Education's Education Data Warehouse and the Florida College System. The Florida College System collects student-level data from each college, including demographics, course enrollments, and grades. The Education Data Warehouse provided the study team with an anonymized student-level dataset of all students reported by the state's community colleges.

Because these are official administrative data used for both state and federal reporting, the data are considered to be the universe of students entering college for the first time in the fall semesters in each of the years in the study. In general, missing data were not a problem. Data on course enrollment and passing rates, as well as age (calculated from date of birth), were available for all students. Valid data on race/ethnicity were available for more than 96 percent of students in all cohorts. The analyses include students of unknown race/ethnicity. Valid data on gender were available for more than 99 percent of students in all the cohorts. Similarly, students with unknown gender were included in the overall analysis, and in the analysis by gender the study team focused on students identified as male or female. Preliminary data from the Florida College System were used to generate statistics and figures for fall 2014.

All data used in the analyses are individual student records that were de-identified by the Florida Department of Education. Results are only in aggregate format and do not include any values for subgroups smaller than five individuals.

Methodology

The study team calculated aggregate averages based on individual student enrollment and passing rates in developmental education and gateway courses.

Course passing rates were calculated as the number of students who received a C or better in the course divided by the total number of students enrolled in the course. While a grade of D is passing, the Florida College System defines a C or better as a successful completion.

There was one gateway course in reading and writing: English composition 1 (ENC 1101). For gateway courses in math the study team presented statistics for intermediate algebra (MAT 1033) as well as a pooled average for all math courses that fulfill the gateway course requirement combined: intermediate algebra, college algebra (MAC 1105), elementary statistics (STA 1023), liberal arts math I (MGF 1106), and liberal arts math II (MGF 1107).

Appendix B. Additional results

This appendix contains tables displaying additional results of the study. Table B1 lists fall enrollment in developmental education by subject for fall 2011 to fall 2014.

Table B1. Fall enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by subject, 2011–14

Subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Total sample ^a	72,527	64,838	68,440	67,289
<i>Math</i>				
Number	28,740	26,098	25,941	14,797
Percent	39.6	40.3	37.9	21.9
<i>Reading</i>				
Number	16,512	13,282	14,169	6,724
Percent	22.8	20.5	20.7	9.9
<i>Writing</i>				
Number	14,621	10,768	11,133	7,688
Percent	20.2	16.6	16.3	11.4

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Tables B2–B4 show enrollment in developmental education courses, by student subgroups for fall 2011 to fall 2014.

Table B2. Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14

Race/ethnicity and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
<i>Asian</i>				
Total sample ^a	1,857	1,740	1,831	1,672
<i>Math</i>				
Number	471	404	431	207
Percent	25.4	23.2	23.5	12.4
<i>Reading</i>				
Number	418	365	360	168
Percent	22.5	21.1	19.7	10.1
<i>Writing</i>				
Number	388	297	299	207
Percent	20.9	17.7	16.3	12.4

(continued)

Table B2. Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14 (continued)

Race/ethnicity and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Black				
Total sample ^a	16,199	13,463	14,819	13,225
<i>Math</i>				
Number	7,846	6,572	6,915	3,527
Percent	48.4	48.8	46.7	26.7
<i>Reading</i>				
Number	5,931	4,467	4,874	2,115
Percent	36.6	33.2	32.9	16.0
<i>Writing</i>				
Number	4,108	3,059	3,334	2,464
Percent	35.2	31.9	29.9	19.0
Hispanic				
Total sample ^a	22,233	20,278	22,079	22,603
<i>Math</i>				
Number	8,105	7,634	7,953	4,618
Percent	36.5	37.7	36.0	20.4
<i>Reading</i>				
Number	4,810	3,893	4,358	2,190
Percent	21.6	19.2	19.7	9.7
<i>Writing</i>				
Number	4,108	3,059	3,334	2,464
Percent	18.5	15.1	15.1	10.9
White				
Total sample ^a	29,746	27,092	27,145	24,733
<i>Math</i>				
Number	11,396	10,631	9,800	5,412
Percent	38.3	39.2	36.1	21.9
<i>Reading</i>				
Number	4,906	4,122	4,158	1,773
Percent	16.5	15.2	15.3	7.2
<i>Writing</i>				
Number	4,036	2,781	2,751	1,971
Percent	13.6	10.3	10.1	8.0
Multiracial				
Total sample ^a	1,535	1,569	1,786	1,851
<i>Math</i>				
Number	538	596	603	388
Percent	38.0	38.0	33.8	21.0
<i>Reading</i>				
Number	288	282	279	152
Percent	18.8	18.0	15.6	8.2
<i>Writing</i>				
Number	243	206	220	165
Percent	15.8	13.1	12.3	8.9

(continued)

Table B2. Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14 (continued)

Race/ethnicity and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Other				
Total sample ^a	324	256	340	204
<i>Math</i>				
Number	126	102	110	60
Percent	38.9	39.8	32.4	29.4
<i>Reading</i>				
Number	68	58	68	19
Percent	21.0	22.7	20.0	9.3
<i>Writing</i>				
Number	67	57	54	30
Percent	20.7	22.3	15.9	14.7

Note: Asian includes Native Hawaiian and Other Pacific Islander, Black includes African American, and Hispanic includes Latino.

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B3. Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by gender and subject, 2011–14

Gender and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Female				
Total sample ^a	38,141	33,888	35,522	35,086
<i>Math</i>				
Number	16,248	14,759	14,475	8,199
Percent	42.6	43.6	40.8	23.4
<i>Reading</i>				
Number	9,103	7,257	7,691	3,536
Percent	23.9	21.4	21.7	10.1
<i>Writing</i>				
Number	7,839	5,797	5,976	4,068
Percent	20.6	17.1	16.8	11.6
Male				
Total sample ^a	34,318	30,878	32,830	31,550
<i>Math</i>				
Number	12,470	11,319	11,434	6,454
Percent	36.3	36.7	34.8	20.5
<i>Reading</i>				
Number	7,403	6,010	6,464	3,121
Percent	21.6	19.5	19.7	9.9
<i>Writing</i>				
Number	6,773	4,961	5,153	3,548
Percent	19.7	16.1	15.7	11.2

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B4. Enrollment in developmental education courses in Florida College System institutions among students entering college for the first time, by age and subject, 2011–14

Age and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Younger than 25				
Total sample ^a	62,075	56,147	59,560	59,749
<i>Math</i>				
Number	24,863	22,747	22,635	12,314
Percent	40.1	40.5	38.0	20.6
<i>Reading</i>				
Number	14,848	11,896	12,532	5,620
Percent	23.9	21.2	21.0	9.4
<i>Writing</i>				
Number	13,139	9,749	10,160	6,686
Percent	21.2	17.4	17.1	11.2
25 and older				
Total sample ^a	10,451	8,691	8,880	7,540
<i>Math</i>				
Number	3,877	3,351	3,306	2,484
Percent	37.1	38.6	37.2	32.9
<i>Reading</i>				
Number	1,664	1,386	1,637	1,104
Percent	15.9	16.0	18.4	14.6
<i>Writing</i>				
Number	1,482	1,019	973	1,002
Percent	14.2	11.7	11.0	13.3

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Tables B5–B8 show passing patterns in developmental education courses, by student subgroups, for fall 2011 to fall 2014.

Table B5. Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by subject, 2011–14

Subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
<i>Math</i>				
Number	17,134	16,260	15,691	9,336
Percent	59.6	62.3	60.5	63.1
<i>Reading</i>				
Number	12,321	9,994	10,992	5,340
Percent	74.6	75.2	77.6	79.4
<i>Writing</i>				
Number	10,481	7,855	8,363	5,904
Percent	71.7	73.0	75.1	76.8

Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B6. Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14

Race/ethnicity and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Asian/Pacific Islander				
<i>Math</i>				
Number	299	275	298	160
Percent	63.5	68.1	69.1	77.3
<i>Reading</i>				
Number	337	310	318	146
Percent	80.6	84.9	88.3	86.9
<i>Writing</i>				
Number	306	242	249	167
Percent	78.9	81.5	83.3	80.7
Black				
<i>Math</i>				
Number	4,075	3,564	3,678	1,983
Percent	51.9	54.2	53.2	56.2
<i>Reading</i>				
Number	4,159	3,142	3,516	1,605
Percent	70.1	70.3	72.1	75.9
<i>Writing</i>				
Number	3,795	3,020	3,161	1,847
Percent	66.6	70.3	71.3	73.4
Hispanic				
<i>Math</i>				
Number	5,180	4,998	5,164	3,177
Percent	63.9	65.5	64.9	68.8
<i>Reading</i>				
Number	3,824	3,100	3,605	1,804
Percent	79.5	79.6	82.7	82.4
<i>Writing</i>				
Number	3,177	2,361	2,657	2,018
Percent	77.3	77.2	79.7	81.9
White				
<i>Math</i>				
Number	7,025	6,896	6,034	3,363
Percent	61.6	64.9	61.6	62.1
<i>Reading</i>				
Number	3,658	3,111	3,224	1,412
Percent	74.6	75.5	77.5	79.6
<i>Writing</i>				
Number	2,920	2,002	2,057	1,494
Percent	72.4	72.0	74.8	75.8

(continued)

Table B6. Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and subject, 2011–14 (continued)

Race/ethnicity and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Multiracial				
<i>Math</i>				
Number	340	371	357	219
Percent	58.3	62.3	59.2	56.4
<i>Reading</i>				
Number	217	214	217	115
Percent	75.4	75.9	77.8	75.7
<i>Writing</i>				
Number	177	144	166	113
Percent	72.8	70.0	75.5	68.5
Other				
<i>Math</i>				
Number	84	51	65	40
Percent	66.7	50.0	59.1	66.7
<i>Reading</i>				
Number	55	44	50	16
Percent	80.9	75.9	73.5	84.2
<i>Writing</i>				
Number	49	37	40	26
Percent	73.1	64.9	74.1	86.7

Note: Asian includes Native Hawaiian and Other Pacific Islander, Black includes African American, and Hispanic includes Latino. The passing rate is calculated by dividing the number of students of each race/ethnicity who earned a C or better in the course by the total number of students of each race/ethnicity enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B7. Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by gender and subject, 2011–14

Gender and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Female				
<i>Math</i>				
Number	10,083	9,699	9,220	5,361
Percent	62.1	65.7	63.7	65.4
<i>Reading</i>				
Number	7,064	5,747	6,188	2,934
Percent	77.6	79.2	80.5	83.0
<i>Writing</i>				
Number	5,911	4,463	4,712	3,277
Percent	75.4	77.0	78.9	80.6
Male				
<i>Math</i>				
Number	7,037	6,544	6,445	3,879
Percent	56.4	57.8	56.4	60.1
<i>Reading</i>				
Number	5,255	4,238	4,790	2,350
Percent	71.0	70.5	74.1	75.3
<i>Writing</i>				
Number	4,563	3,387	3,647	2,570
Percent	67.4	68.3	70.8	72.4

Note: The passing rate is calculated by dividing the number of students of each gender who earned a C or better in the course by the total number of students of each gender enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B8. Passing patterns in developmental education courses in Florida College System institutions among students entering college for the first time, by age and subject, 2011–14

Age and subject	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Younger than 25				
<i>Math</i>				
Number	14,554	13,937	13,389	7,671
Percent	58.5	61.3	59.2	62.3
<i>Reading</i>				
Number	11,070	8,956	9,710	4,442
Percent	74.6	75.3	77.5	79.0
<i>Writing</i>				
Number	9,420	7,132	7,663	5,150
Percent	71.7	73.2	75.4	77.0
25 and older				
<i>Math</i>				
Number	2,580	2,323	2,302	1,665
Percent	66.6	69.3	69.6	67.0
<i>Reading</i>				
Number	1,251	1,038	1,282	898
Percent	75.2	74.9	78.3	81.3
<i>Writing</i>				
Number	1,061	723	700	754
Percent	71.6	71.0	71.9	75.3

Note: The passing rate is calculated by dividing the number of students in each age group who earned a C or better in the course by the total number of students in each age group enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Tables B9–B12 show enrollment in gateway courses, by student subgroups, for fall 2011 to fall 2014.

Table B9. Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by course, 2011–14

Course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Total sample ^a	72,527	64,838	68,440	67,289
<i>English composition 1</i>				
Number	28,484	28,570	31,058	37,879
Percent	39.3	44.1	45.4	56.3
<i>Intermediate algebra</i>				
Number	10,833	9,686	12,065	19,910
Percent	14.9	14.9	17.6	29.6
<i>All math gateway courses combined</i>				
Number	18,806	17,140	20,313	27,104
Percent	25.9	26.4	29.7	40.3

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B10. Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and course, 2011–14

Race/ethnicity and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Asian				
Total sample ^a	1,857	1,740	1,831	1,672
<i>English composition 1</i>				
Number	712	726	802	901
Percent	38.3	41.7	43.8	53.9
<i>Intermediate algebra</i>				
Number	311	301	339	457
Percent	16.8	17.3	18.5	27.3
<i>All math gateway courses combined</i>				
Number	681	626	678	753
Percent	36.7	36.0	37.0	45.0
Black				
Total sample ^a	16,199	13,463	14,819	13,225
<i>English composition 1</i>				
Number	4,211	4,081	4,790	6,627
Percent	26.0	30.3	32.3	50.1
<i>Intermediate algebra</i>				
Number	1,663	1,476	1,989	3,767
Percent	10.3	11.0	13.4	28.5
<i>All math gateway courses combined</i>				
Number	2,555	2,269	2,989	4,559
Percent	15.8	16.9	20.2	34.5
Hispanic				
Total sample ^a	22,233	20,278	22,079	22,603
<i>English composition 1</i>				
Number	8,549	8,983	10,225	12,830
Percent	38.5	44.3	46.3	56.8
<i>Intermediate algebra</i>				
Number	3,585	3,377	4,412	7,330
Percent	16.1	16.7	20.0	32.4
<i>All math gateway courses combined</i>				
Number	6,006	5,741	7,112	9,589
Percent	27.0	28.3	32.2	42.4
White				
Total sample ^a	29,746	27,092	27,145	24,733
<i>English composition 1</i>				
Number	13,989	13,745	13,958	14,725
Percent	47.0	50.7	51.4	59.5
<i>Intermediate algebra</i>				
Number	4,901	4,186	4,849	6,956
Percent	16.5	15.5	17.9	28.1
<i>All math gateway courses combined</i>				
Number	8,866	7,874	8,663	10,166
Percent	29.8	29.1	31.9	41.1

(continued)

Table B10. Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and course, 2011–14 (continued)

Race/ethnicity and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Multiracial				
Total sample ^a	1,535	1,569	1,786	1,851
<i>English composition 1</i>				
Number	747	823	1,010	1,148
Percent	48.7	52.5	56.6	62.0
<i>Intermediate algebra</i>				
Number	247	277	382	569
Percent	16.1	17.7	21.4	30.7
<i>All math gateway courses combined</i>				
Number	500	498	689	831
Percent	32.6	31.7	38.6	44.9
Other				
Total sample ^a	324	256	340	204
<i>English composition 1</i>				
Number	124	98	152	106
Percent	38.3	38.3	44.7	52.0
<i>Intermediate algebra</i>				
Number	51	30	61	53
Percent	15.7	11.7	17.9	26.0
<i>All math gateway courses combined</i>				
Number	92	67	125	69
Percent	28.4	26.2	36.8	33.8

Note: Asian includes Native Hawaiian and Other Pacific Islander, Black includes African American, and Hispanic includes Latino.

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B11. Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by gender and course, 2011–14

Gender and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Female				
Total sample ^a	38,141	33,888	35,522	35,086
<i>English composition 1</i>				
Number	14,701	14,663	15,750	19,832
Percent	38.5	43.3	44.3	56.5
<i>Intermediate algebra</i>				
Number	5,588	5,073	6,340	10,568
Percent	14.7	15.0	17.9	30.1
<i>All math gateway courses combined</i>				
Number	9,003	8,227	9,908	13,760
Percent	23.6	24.3	27.9	39.2
Male				
Total sample ^a	34,318	30,878	32,830	31,550
<i>English composition 1</i>				
Number	13,774	13,897	15,287	17,702
Percent	40.1	45.0	46.6	56.1
<i>Intermediate algebra</i>				
Number	5,240	4,610	5,721	9,170
Percent	15.3	14.9	17.4	29.1
<i>All math gateway courses combined</i>				
Number	9,795	8,909	10,390	13,105
Percent	28.5	28.9	31.7	41.5

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B12. Enrollment in gateway courses in Florida College System institutions among students entering college for the first time, by age and course, 2011–14

Age and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Younger than 25				
Total sample ^a	62,075	56,147	59,560	59,749
<i>English composition 1</i>				
Number	26,450	26,678	29,272	36,364
Percent	42.6	47.5	49.1	60.9
<i>Intermediate algebra</i>				
Number	10,583	9,526	11,820	19,652
Percent	17.1	17.0	19.9	32.9
<i>All math gateway courses</i>				
Number	18,453	16,901	19,977	26,749
Percent	29.7	30.1	33.5	44.8
25 and older				
Total sample ^a	10,452	8,691	8,880	7,540
<i>English composition 1</i>				
Number	2,034	1,892	1,786	1,515
Percent	19.5	21.8	20.1	20.1
<i>Intermediate algebra</i>				
Number	250	160	245	258
Percent	2.4	1.8	2.8	3.4
<i>All math gateway courses</i>				
Number	353	239	336	355
Percent	3.4	2.8	3.8	4.7

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Tables B13–B16 show passing patterns in gateway courses, by student subgroups, for fall 2011 to fall 2014.

Table B13. Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by course, 2011–14

Course	Fall 2011			Fall 2012			Fall 2013			Fall 2014		
	Enrolled	Passed	Percent									
	Number	Number		Number	Number		Number	Number		Number	Number	
English composition 1	28,484	21,084	74	28,570	21,242	74.4	31,058	23,197	74.7	37,879	27,505	72.6
Intermediate algebra	10,833	6,965	64.3	9,686	6,281	64.9	12,065	7,724	64	19,910	10,851	54.5
All math gateway courses combined	18,806	12,338	65.6	17,140	11,172	65.2	20,313	13,127	64.6	27,104	15,636	57.7

Note: The passing rate is calculated by dividing the number of students who earned a C or better in the course by the total number of students enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B14. Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and course, 2011–14

Race/ethnicity and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Asian/Pacific Islander				
<i>English composition 1</i>				
Number	576	608	659	736
Percent	80.9	83.8	82.2	81.7
<i>Intermediate algebra</i>				
Number	243	209	236	306
Percent	78.1	69.4	69.6	67.0
<i>All math gateway courses combined</i>				
Number	538	463	496	539
Percent	79.0	74.0	73.2	71.6
Black				
<i>English composition 1</i>				
Number	2,764	2,746	3,325	4,268
Percent	65.6	67.3	69.4	64.4
<i>Intermediate algebra</i>				
Number	946	919	1,098	1,748
Percent	56.9	62.3	55.2	46.4
<i>All math gateway courses combined</i>				
Number	1,438	1,383	1,685	2,224
Percent	56.3	61.0	56.4	48.8
Hispanic				
<i>English composition 1</i>				
Number	6,500	6,890	7,838	9,651
Percent	76.0	76.7	76.7	75.2
<i>Intermediate algebra</i>				
Number	2,319	2,272	2,890	4,140
Percent	64.7	67.3	65.5	56.5
<i>All math gateway courses combined</i>				
Number	4,016	3,848	4,698	5,712
Percent	66.9	67.0	66.1	59.6
White				
<i>English composition 1</i>				
Number	10,485	10,253	10,427	10,914
Percent	75.0	74.6	74.7	74.1
<i>Intermediate algebra</i>				
Number	3,194	2,672	3,196	3,892
Percent	65.2	63.8	65.9	56.0
<i>All math gateway courses combined</i>				
Number	5,857	5,100	5,679	5,995
Percent	66.1	64.8	65.6	59.0

(continued)

Table B14. Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by race/ethnicity and course, 2011–14 (continued)

Race/ethnicity and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Multiracial				
<i>English composition 1</i>				
Number	549	580	735	774
Percent	73.5	70.5	72.8	67.4
<i>Intermediate algebra</i>				
Number	165	164	240	298
Percent	66.8	59.2	62.8	52.4
<i>All math gateway courses combined</i>				
Number	336	293	440	457
Percent	67.2	58.8	63.9	55.0
Other				
<i>English composition 1</i>				
Number	96	74	115	74
Percent	77.4	75.5	75.7	69.8
<i>Intermediate algebra</i>				
Number	39	14	37	23
Percent	76.5	46.7	60.7	43.4
<i>All math gateway courses combined</i>				
Number	69	34	82	33
Percent	75.0	50.8	65.6	47.8

Note: Asian includes Native Hawaiian and Other Pacific Islander, Black includes African American, and Hispanic includes Latino. The passing rate is calculated by dividing the number of students of each race/ethnicity who earned a C or better in the course by the total number of students of each race/ethnicity enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B15. Passing patterns in gateway courses in Florida College System institutions among students entering college for the first time, by gender and course, 2011–14

Gender and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Female				
<i>English composition 1</i>				
Number	11,428	11,532	12,342	15,192
Percent	77.7	78.7	78.4	76.6
<i>Intermediate algebra</i>				
Number	3,841	3,554	4,300	6,084
Percent	68.7	70.1	67.8	57.6
<i>All math gateway courses combined</i>				
Number	6,283	5,764	6,820	8,357
Percent	69.8	70.1	68.8	60.7
Male				
<i>English composition 1</i>				
Number	9,648	9,702	10,838	12,092
Percent	70.1	69.8	70.9	68.3
<i>Intermediate algebra</i>				
Number	3,121	2,725	3,420	4,673
Percent	59.6	59.1	59.8	51.0
<i>All math gateway courses combined</i>				
Number	6,050	5,405	6,295	7,145
Percent	61.8	60.7	60.6	54.5

Note: The passing rate is calculated by dividing the number of students of each gender who earned a C or better in the course by the total number of students of each gender enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B16. Passing patterns in gateway courses in Florida College System institutions, by age and course, 2011–14

Age and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Younger than 25				
<i>English composition 1</i>				
Number	19,528	19,807	21,849	26,366
Percent	73.8	74.2	74.6	72.5
<i>Intermediate algebra</i>				
Number	6,773	6,142	7,518	10,672
Percent	64.0	64.5	63.6	54.3
<i>All math gateway courses combined</i>				
Number	12,056	10,967	12,849	15,380
Percent	65.3	64.9	64.3	57.5
25 and older				
<i>English composition 1</i>				
Number	1,556	1,435	1,348	1,139
Percent	76.5	75.9	75.5	75.2
<i>Intermediate algebra</i>				
Number	192	139	206	179
Percent	76.8	86.9	84.1	69.4
<i>All math gateway courses combined</i>				
Number	282	205	278	256
Percent	79.9	85.8	82.7	72.1

Note: The passing rate is calculated by dividing the number of students in each age group who earned a C or better in the course by the total number of students in each group enrolled in the course.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Tables B17–B20 show the proportion of all students entering college for the first time who passed a gateway course, by student subgroup, for fall 2011 to fall 2014.

Table B17. Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by course 2011–14

Course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Total sample ^a	72,527	64,838	68,440	67,289
<i>English composition 1</i>				
Number	21,084	21,242	23,197	27,505
Percent	29.1	32.8	33.9	40.9
<i>Intermediate algebra</i>				
Number	6,965	6,281	7,724	10,851
Percent	9.6	9.7	11.3	16.1
<i>All math gateway courses combined</i>				
Number	12,338	11,172	13,127	15,636
Percent	17.0	17.2	19.2	23.2

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B18. Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by race/ethnicity and course, 2011–14

Race/ethnicity and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Asian/Pacific Islander				
Total sample ^a	1,857	1,740	1,831	1,672
<i>English composition 1</i>				
Number	576	608	659	736
Percent	31.0	34.9	36.0	44.0
<i>Intermediate algebra</i>				
Number	243	209	236	306
Percent	13.1	12.0	12.9	18.3
<i>All math gateway courses combined</i>				
Number	538	463	496	539
Percent	29.0	26.6	27.1	32.2
Black				
Total sample ^a	16,199	13,463	14,819	13,225
<i>English composition 1</i>				
Number	2,764	2,746	3,325	4,268
Percent	17.1	20.4	22.4	32.3
<i>Intermediate algebra</i>				
Number	946	919	1,098	1,748
Percent	5.8	6.8	7.4	13.2
<i>All math gateway courses combined</i>				
Number	1,438	1,383	1,685	2,224
Percent	8.9	10.3	11.4	16.8
Hispanic				
Total sample ^a	22,233	20,278	22,079	22,603
<i>English composition 1</i>				
Number	6,500	6,890	7,838	9,651
Percent	29.2	34.0	35.5	42.7
<i>Intermediate algebra</i>				
Number	2,319	2,272	2,890	4,140
Percent	10.4	11.2	13.1	18.3
<i>All math gateway courses combined</i>				
Number	4,016	3,848	4,698	5,712
Percent	18.1	19.0	21.3	25.3
White				
Total sample ^a	29,746	27,092	27,145	24,733
<i>English composition 1</i>				
Number	10,485	10,253	10,427	10,914
Percent	35.3	37.9	38.4	44.1
<i>Intermediate algebra</i>				
Number	3,194	2,672	3,196	3,892
Percent	10.7	9.9	11.8	15.7
<i>All math gateway courses combined</i>				
Number	5,857	5,100	5,679	5,995
Percent	19.7	18.8	20.9	24.2

(continued)

Table B18. Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by race/ethnicity and course, 2011–14 (continued)

Race/ethnicity and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Multiracial				
Total sample ^a	1,535	1,569	1,786	1,851
<i>English composition 1</i>				
Number	549	580	735	774
Percent	35.8	37.0	41.2	41.8
<i>Intermediate algebra</i>				
Number	165	164	240	298
Percent	10.8	10.5	13.4	16.1
<i>All math gateway courses combined</i>				
Number	336	293	440	457
Percent	21.9	18.7	24.6	24.7
Other				
Total sample ^a	324	256	340	204
<i>English composition 1</i>				
Number	96	74	115	74
Percent	29.6	22.8	33.8	36.3
<i>Intermediate algebra</i>				
Number	39	14	37	23
Percent	12.0	4.3	10.9	11.3
<i>All math gateway courses combined</i>				
Number	69	34	82	33
Percent	21.3	10.5	24.1	16.2

Note: Asian includes Native Hawaiian and Other Pacific Islander, Black includes African American, and Hispanic includes Latino.

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B19. Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by gender and course, 2011–14

Gender and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Female				
Total sample ^a	38,141	33,888	35,522	35,086
<i>English composition 1</i>				
Number	11,428	11,532	12,342	15,192
Percent	30.0	34.0	34.7	43.3
<i>Intermediate algebra</i>				
Number	3,841	3,554	4,300	6,084
Percent	10.1	10.5	12.1	17.3
<i>All math gateway courses</i>				
Number	6,283	5,764	6,820	8,357
Percent	16.5	17.0	19.2	23.8
Male				
Total sample ^a	34,318	30,878	32,830	31,550
<i>English composition 1</i>				
Number	9,648	9,702	10,838	12,092
Percent	28.1	31.4	33.0	38.3
<i>Intermediate algebra</i>				
Number	3,121	2,725	3,420	4,673
Percent	9.1	8.8	10.4	14.8
<i>All math gateway courses</i>				
Number	6,050	5,405	6,295	7,145
Percent	17.6	17.5	19.2	22.6

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

Table B20. Proportion of all students in Florida College System institutions entering college for the first time who passed a gateway course, by age and course, 2011–14

Age and course	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Younger than 25				
Total sample ^a	62,075	56,147	59,560	59,749
<i>English composition 1</i>				
Number	19,528	19,807	21,849	26,366
Percent	31.5	35.3	36.7	44.1
<i>Intermediate algebra</i>				
Number	6,773	6,142	7,518	10,672
Percent	10.9	10.9	12.6	17.9
<i>All math gateway courses</i>				
Number	12,056	10,967	12,849	15,380
Percent	19.4	19.5	21.6	25.7
25 and older				
Total sample ^a	10,452	8,691	8,880	7,540
<i>English composition 1</i>				
Number	1,556	1,435	1,348	1,139
Percent	14.9	16.5	15.2	15.1
<i>Intermediate algebra</i>				
Number	192	139	206	179
Percent	1.8	1.6	2.3	2.4
<i>All math gateway courses</i>				
Number	282	205	278	256
Percent	2.7	2.4	3.1	3.4

a. The total number of students entering college for the first time who enrolled each semester.

Source: Authors' analysis of Florida Department of Education data for the 2011–14 fall semesters.

References

- Alliance for Excellent Education. (2011). *Saving now and saving later: How high school reform can reduce the nation's wasted remediation dollars*. Washington, DC: Author. <http://eric.ed.gov/?id=ED520329>
- Bailey, T., Jeong, D. W., & Cho, S. W. (2010). Referral, enrollment, and completion in developmental education sequences in community colleges. *Economics of Education Review*, 29(2), 255–270. <http://eric.ed.gov/?id=EJ876583>
- Bautsch, B. (2013). *Reforming remedial education*. Washington, DC: National Conference of State Legislatures. Retrieved on November 6, 2015, from http://www.ncsl.org/documents/educ/remedialeducation_2013.pdf.
- Complete College America. (2012). *Remediation: Higher education's bridge to nowhere*. Washington, DC: Author. <http://eric.ed.gov/?id=ED536825>
- Florida College System. (2014). *The fact book 2014*. Tallahassee, FL: Florida Department of Education. Retrieved on November 6, 2015, from <http://www.fldoehub.org/CCTCMIS/c/Documents/Fact%20Books/fb2014.pdf>.
- Florida Department of Education. (n.d.). *Facts at a glance*. Retrieved on June 21, 2016, from <http://www.fldoe.org/schools/higher-ed/fl-college-system/facts-at-a-glance.stml>.
- Fulton, M., Gianneschi, M., Blanco, C., & DeMaria, P. (2014). *Developmental strategies for college readiness and success*. Denver, CO: Education Commission of the States. Retrieved on November 6, 2015, from <http://www.ecs.org/docs/DevEdStrategies.pdf>.
- Hu, S., Bertrand Jones, T., Brower, R., Park, T., Tandberg, D., Nix, A., et al. (2015). *Learning from the ground up: Developmental education reform at Florida College System institutions*. Tallahassee, FL: Center for Postsecondary Success.
- Hu, S., Park, T., Woods, C. S., Tandberg, D., Bertrand Jones, T., Hankerson, D., et al. (2015). *How students make course enrollment decisions in an era of increased choice: Results from a survey of enrollment patterns and choice factors*. Tallahassee, FL: Center for Postsecondary Success.
- Hughes, J., & Petscher, Y. (2016). *A guide to developing and evaluating a college readiness screener (REL 2016–169)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southeast. Retrieved from <https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=4503>.
- Parker, T. L., Barrett, M. S., & Bustillos, L. T. (2014). *The state of developmental education: Higher education and public policy priorities*. New York, NY: Palgrave Macmillan.
- Underhill, B. (2013, February). *College remediation*. Presentation at the Florida Senate 2013 Regular Session Appropriations Subcommittee on Education Meeting, Tallahassee,

FL. Retrieved on November 6, 2015, from http://www.flsenate.gov/PublishedContent/Committees/2012-2014/AED/MeetingRecords/MeetingPacket_2056.pdf.

U.S. Department of Education. (2010). *Digest of education statistics: Table 241*. Washington, DC: U.S. Department of Education, National Center for Educational Statistics. Retrieved on February 4, 2016, from https://nces.ed.gov/programs/digest/d10/tables/dt10_241.asp.

The Regional Educational Laboratory Program produces 7 types of reports



Making Connections

Studies of correlational relationships



Making an Impact

Studies of cause and effect



What's Happening

Descriptions of policies, programs, implementation status, or data trends



What's Known

Summaries of previous research



Stated Briefly

Summaries of research findings for specific audiences



Applied Research Methods

Research methods for educational settings



Tools

Help for planning, gathering, analyzing, or reporting data or research