A Matter of Degrees:
Practices to Pathways

High-Impact Practices for
Community College Student Success

Methodology Supplement

Methodology information for *A Matter of Degrees: Practices to Pathways*

Introduction

A Matter of Degrees: Practices to Pathways (HIP3) is the third of three reports that are part of the Center's special initiative, Identifying and Promoting High-Impact Practices in Community Colleges. The first report defined and described 13 promising practices in community colleges. The second report examined the relationships between participation in the practices and student engagement as measured by the Community College Survey of Student Engagement (*CCSSE*) and the Survey of Entering Student Engagement (*SENSE*) surveys. The second report concluded that 12 of the 13 Center-identified practices are high impact with respect to the *CCSSE* and *SENSE* benchmarks. This third report presents the relationship between participation in the 13 practices and student outcomes using student record data matched to *CCSSE* and *SENSE* survey respondents. The list of these 13 HIPs and a brief description of each can be found on pages 4 and 5 of HIP3.

Student outcome variables included in this report are *completion of at least one developmental math or English course with a grade of C or better*, *completion of a gatekeeper course in math or English with a grade of C or better*, and *fall-to-spring and fall-to-fall persistence*. Center analysts also examined the impact of participation in multiple high-impact practices classified as structured group learning experiences; these are orientation, accelerated or fast-track developmental education, first-year experience, student success course, and learning community. Course completion and persistence information are derived from student record data, while participation in the 13 HIPs is extracted from survey responses. The relationships between participation in these HIPs and the student outcomes are investigated through the use of logistic regression (completion of course outcomes) and discrete time hazard models (persistence outcomes).

Data Sources

Data sources for this report include SENSE and CCSSE respondents who provided a valid student identifier on their survey and matched student record data provided by participating colleges. This section provides further detail on HIP-3 data sources, including the procedures used to match and clean student record data to conform to a standard structure across the colleges.

Center Survey Data. *SENSE* is administered during weeks four and five of the fall academic term in classes such as developmental math or English and first-level college math or English courses, which are most likely to enroll first-time students. The survey focuses on students' experiences from the time of their decision to attend their college through the end of the first three weeks of the fall term. *SENSE* collects data on practices that are most likely to strengthen early student engagement. Entering students are defined as those who indicate that it is their first term enrolled at the college where the survey is administered. *CCSSE* is administered in the spring and surveys credit students. When responding, students are instructed to consider their experiences during the current academic year. Survey items focus on educational practices and student behaviors associated with higher levels of learning, persistence, and completion. Both *SENSE* and *CCSSE* include an optional item requesting that students provide their student identification number (student ID).

Student Record Data. In 2011 the Center contacted *SENSE* and *CCSSE* participant colleges and requested information on the alpha-numeric structure of their student IDs. Center research staff used the information received to review the optional ID field on *CCSSE* data sets from 2005 to 2012 and *SENSE* data sets from 2009 to 2012. The IDs that closely matched the ID structures provided by the college where the survey was administered were considered potentially valid student IDs. Center researchers identified the percentage of potentially valid IDs at each college and the colleges with the highest percentage of potentially valid IDs were contacted during a pilot phase and asked to participate in the HIP3 project by providing student record data where the student IDs from the surveys could be matched with their student record data. Center research staff extracted student IDs and survey numbers from the *SENSE* and *CCSSE* surveys and checked the data sets for duplicate student IDs. There were very few IDs that appeared more than once and, where this occurred, only the most recent survey record was retained for this project. This final list of student IDs was then sent to the respective colleges for data matching. Twelve colleges agreed to participate and provided usable data.

Student record data provided by the colleges included data on all courses attempted, including year and term attempted, course number, course name, course outcome, whether the course was developmental or remedial, and number of credits the course was worth. Colleges were also asked to provide a list of first-year experience (FYE) courses, student success courses (SSC), and gatekeeper (GK) courses. Not all colleges provided the information needed to identify these high-impact practice courses. For colleges that did not identify developmental, FYE, SSC, and GK courses, Center staff downloaded and reviewed

course catalogs in order to identify such courses. If gatekeeper courses were not identified, Composition I (or similar) course sections were flagged as gatekeeper English courses; and first-level math courses listed as required for many degrees (often Algebra I) or certificates were coded as gatekeeper math courses.

Course grading conventions varied considerably across colleges. Some colleges allowed students to take developmental courses as pass/fail (P/F), successful/unsuccessful (S/U), while others used traditional letter grades. In the cases where P/F or S/U were used, P and S were considered equivalent to a grade of C or better for the purpose of coding course completion.

Colleges also provided demographic data for the matched students: age in years, gender, race/ethnicity, major, and enrollment status. These demographic variables were provided for each term the student was enrolled so that the Center could track changes in enrollment status, age, and major. Student records also included a flag to indicate the term a student completed a certificate or a degree.

The size and urbanicity of the twelve colleges included in this report are presented in the following table, while student demographics are presented in tables at the end of this document.

Characteristics of 12 colleges that provided student record data

Size		Urbanicity	
Count	Size	Count	Urban Location
3	Small	6	Urban
2	Medium	2	Suburban
1	Large	4	Rural
6	Extra Large		

Matching Survey Data and Student Record Data

The list of potentially valid IDs identified by Center staff was sent to the 12 participating colleges along with the survey numbers the IDs were taken from. In order to maintain student anonymity at the Center level, colleges matched the IDs against their systems and, prior to submitting student record data to the Center, encrypted all student IDs. Center staff used survey numbers to match student record data with survey data. After combining the survey data and student record data, the student IDs were deleted from the project data set, leaving the survey number as the unique record identifier.

Statistical analyses

Three general outcomes are analyzed in this report:

- Completion of at least one developmental education course (math or English) with a grade of C or better
- Completion of a gatekeeper course (math or English) by developmental students with a grade of C or better
- Persistence (fall-to-spring and fall-to-fall)

Separate analyses were conducted for math and English courses as well as for fall-to-spring and fall-to-fall persistence.

The analyses for developmental and gatekeeper outcomes were limited to developmental students. Although gatekeeper courses are required for all students (college-ready and developmental), the gatekeeper analyses were limited to developmental students because these courses are essentially a final hurdle in a sometimes long line of hurdles students must overcome before they have a chance of earning a desired degree or certificate. Persistence analyses included both developmental and college-ready students, although the analyses were conducted separately for these two groups.

Two analytic methods were used to study the relationships between participation in the HIPs and the student outcomes defined above. For the developmental education and gatekeeper models, the focus was on whether students who participated in a HIP were more likely to pass at least one of these courses. As such, these outcome variables or dependent variables are binary (e.g., pass/did not pass). The analysis did not consider how many attempts it took for students to pass one of these courses, but rather whether they passed. Therefore, student record data were collapsed to one record per student with variables coded to reflect whether a student ever passed developmental or gatekeeper math or English courses. As these outcome variables were dichotomous and not time-dependent, logistic regression was used to analyze the likelihood that participation in a HIP was related to passing one of these courses.

Developmental Education Course Completion Models. Since these models focus on completion of developmental education courses, the population for these models includes only students identified by the *SENSE* or *CCSSE* surveys as developmental. The analysis data set consists of one record per student. Developmental reading and developmental writing courses were combined to create a single indicator

for developmental English in which a value of 1 (one) on the developmental English variable indicates that a student passed at least one attempted developmental reading or developmental writing course. Separate models were run for developmental math and developmental English. Since the outcomes for these models are dichotomous, logistic regression was used to analyze these data. Students who completed the *CCSSE* or *SENSE* survey prior to 2011 were deleted from the analysis data sets as were student record data prior to 2005 for *CCSSE* and 2009 for *SENSE*.

All developmental education course completion models include three covariates: enrollment status (full- or less-than-full-time) at the time the student completed the *CCSSE* or *SENSE* survey, age (traditional/non-traditional) at the time the student completed the survey, and first-generation status.

Gatekeeper Course Completion Models. These models focus on the relationship between participation in a HIP or HIP-related activity and successful completion of a math or English gatekeeper course. As noted earlier, only developmental education students were included in these models. The outcome variables for these models are dichotomous in which 1 indicates the student successfully completed the gatekeeper course with a grade of C or better and 0 (zero) indicates they did not successfully complete the course. These analyses include one record per student. Because the outcome is dichotomous, logistic regression was used. As above, students who completed the *CCSSE* or *SENSE* survey prior to 2011 were deleted from the analysis data sets as were student record data prior to 2005 for *CCSSE* and 2009 for *SENSE*.

All gatekeeper course completion models include the following three covariates: enrollment status at the time the student completed the *CCSSE* or *SENSE* survey, traditional/non-traditional age at the time the student completed the survey, and first-generation status.

Persistence Models. Persistence, by definition, implies a passage of time. As such, the analysis of persistence has to take time into consideration, requiring a different analytic method than that used in the previous developmental education course and gatekeeper course completion models. Fall-to-spring persistence stipulates continuous enrollment in two consecutive terms; fall-to-fall persistence has several possible trajectories: fall-spring-fall, fall-spring-summer-fall, fall-summer-fall, or simply fall-fall (not enrolling in the spring or summer terms). As all colleges included in these analyses were semester-system colleges, variations on persistence for quarter-system colleges is not applicable. As such,

establishing fall-to-fall persistence requires a minimum of two terms and a maximum of four terms. Given the time-varying aspect of this outcome and the different possible trajectories, discrete-time hazard models (implemented through PROC LOGISTIC in SAS) were used in the analyses of both persistence outcomes. Discrete time hazard models are a form of event history or survival analysis. Discrete-time models are used to analyze the relationships between predictors and an outcome that only occurs at discrete time points and is not repeatable (i.e., the outcome can occur at most once for any individual (Yamaguchi, 1991). Since fall-to-spring and fall-to-fall persistence can only occur once for an individual and occur at specific points in time along a student's enrollment trajectory, the discrete-time hazard model is appropriate in this situation.

Data used in the persistence models included one record per student per term. Since the high-impact practice item set was first administered in 2011, all records for students who completed the *SENSE* or *CCSSE* survey prior to 2011 were dropped from the analysis data set. Any student whose first term enrolled at the college was not a fall term was also excluded. Since these analyses focused on persistence through a student's second fall term and there were a possible four terms from first fall to second fall (allowing that students could have attended both the spring and summer terms between the fall terms), only the first four terms of attendance were retained in the analysis data set. Additionally, student records for terms prior to 2005 for *CCSSE* and 2009 for *SENSE* were excluded from the analysis data sets used in the persistence models.

All persistence models include variables for the following eight covariates: enrollment status, age, first-generation status, number of terms enrolled, number of developmental courses attempted, ratio of the number of developmental courses attempted to number of developmental courses successfully completed each term, ratio of the number of courses attempted to number of courses the student withdrew from or dropped, and the ratio of the number of courses attempted overall to the number of courses successfully completed. Inasmuch as these analyses included a time component (each term attended was a separate record in the analyses) and community college students frequently change status between full-time and part-time depending on their circumstances at any given time, enrollment status was allowed to vary from term to term based on the number of credits in which the student was enrolled. A student was determined to be full-time if they enrolled in 12 or more credits and part-time if they enrolled in less than 12 credits during a given term. Other covariates allowed to vary over time were age, number of terms enrolled, number of developmental education courses attempted, and the

ratio of developmental education courses attempted to number completed successfully per term. All other covariates retain the same value every term for a given student.

Criteria for significance tests

The second Center report on high-impact practices investigated relationships between student behaviors measured by the *CCSSE* and *SENSE* surveys and survey benchmark scores. Because those data were cross-sectional, and were collected at a fixed point in time, Center researchers used a rigorous and conservative standard to evaluate the relationships among those data. The analyses included here and in the HIP3 report examines relationships between behaviors reported on surveys at one point in time and student outcomes that occurred at varying points in time, some more temporally removed from the survey administration than others. As such, this report uses a more liberal significance criteria for the model Wald chi-square significance and HIP item-specific significance of $p <= 0.10$.

Limitations

Due to an overrepresentation of large urban colleges in the matched student record data set HIP3 findings may not be generalizable to the broader community college student population. (See the institutional characteristics tables on page 4 of this document.) Another factor effecting the generalizability of the results is that *SENSE* and *CCSSE* respondents who provided student IDs are more likely than the entire 2012 three-year *SENSE* and *CCSSE* cohorts to be classified as developmental. *CCSSE* respondents included in these analyses are also more likely than the entire 2012 three-year *CCSSE* cohort to be between 18 and 24 years of age. See the *SENSE* and *CCSSE* student characteristic tables on pages 9 and 10 of this document for the full demographic comparisons of respondents included in the analyses presented here and *SENSE* and *CCSSE* survey respondents.

While the results are valid for the sample of students included in the analyses, generalizability may be limited by the distribution of student respondents and the college size and urbanicity. This limitation does not mean the results are not meaningful, but rather that a larger and more representative data set may produce different results.

SENSE Respondents: Comparative Demographic Distributions

Respondent Characteristic	2012 *SENSE* 3-Year Cohort	Institutions That Provided Student Record Data	Analysis Data Set (matched student record data)
Enrollment (% less than full-time)	27%	31%	28%
Traditional age (% Age 18-24)	82%	83%	82%
Sex (% Female)	56%	56%	58%
Developmental Students	64%	70%	70%
First-generation Students	43%	43%	41%
Race/Ethnicity			
American Indian or other Native American	2%	2%	1%
Asian, Asian American, or Pacific Islander	4%	4%	3%
Native Hawaiian	< 1%	< 1%	< 1%
Black or African American,	17%	18%	21%
White, Non-Hispanic	54%	45%	54%
Hispanic, Latino, or Spanish	19%	28%	17%
Other	4%	5%	4%
N	102,265	6,883	4,296

CCSSE Respondents: Comparative Demographic Distributions

Respondent Characteristic	2012 *CCSSE* 3-Year Cohort	Institutions That Provided Student Record Data	Analysis Data Set (matched student record data)
Enrollment (% less than full-time)	28%	32%	28%
Traditional age (% Age 18-24)	64%	67%	71%
Sex (% Female)	57%	58%	59%
Developmental Students	53%	57%	58%
First-generation Students	34%	34%	34%
Race/Ethnicity			
American Indian or other Native American	2%	1%	1%
Asian, Asian American, or Pacific Islander	5%	5%	4%
Native Hawaiian	<1%	<1%	<1%
Black or African American,	13%	13%	13%
White, Non-Hispanic	62%	50%	64%
Hispanic, Latino, or Spanish	14%	26%	14%
Other	4%	4%	4%
N	453,093	10,624	4,631

References

Yamaguchi, Kazuo (1991). *Event history analysis*. Newbury Park, CA: Sage Publications, Inc.

For additional question, please contact Mike Bohlig at bohlig@cccse.org.

Results

HIP3 presented selected positive results where participation in a HIP showed an increased likelihood of achieving one of the defined outcome measures (completion of developmental education course, completion of gatekeeper course, and persistence). This document includes those results as well as the results for all other models tested that met the minimum criteria (Wald chi-square *p*<0.10 and HIP variable significant at *p*<0.10). Some of the results show that participation in a promising practice appears to increase the likelihood (odds ratio (OR) > 1.00) of successfully completing a developmental course, gatekeeper course, or persisting from fall-to-spring or fall-to-fall. Other results show that participation in the promising practices appear to lessen the likelihood (OR < 1.00) of attaining one of these goals. This supplemental methods report does not attempt to offer hypotheses as to why these latter results emerged.

To facilitate linking the results presented here with survey items, the survey and item number are included with each set of results below. Following the "Practice" specification at the beginning of each set of results is a code enclosed in square brackets (e.g., [*CCSSE* ppq1]). There are two parts to this code. The first is the name of the survey administration; the second tells the part of the survey and the survey item number. In the example above, the item was administered as part of the CCSSE and comes from the promising practice item set, item number 1. The following table provides a key to interpreting the item codes.

Code	Source
CCSSE ppq#	*CCSSE* Promising Practice item
CCSSE main q#	*CCSSE* main survey item
SENSE ppq#	*SENSE* promising practice item
SENSE main q#	*SENSE* main survey item

Several of the analyses conducted were based on calculated variables derived from more than one item in the survey. In these cases, the code to identify the item used in the analysis references both items.

Results are organized by outcome measure.

Outcome 1: Completion of at Least One Developmental Education Course with a Grade of C or Better

NOTE: All analyses in this section include only developmental students.

Practice: Registration before classes begin [*CCSSE* ppq1]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 44.1050 (df=4), *p* < .0001, N=1,777

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Registered for all classes before the first class session	1	2.25	1.594	3.187	<.0001
Enrollment status	1	1.12	0.898	1.406	0.3079
Traditional age	1	1.22	0.975	1.516	0.0829
Generation status	1	0.64	0.521	0.791	<.0001

Interpretation: *CCSSE* developmental students who reported registering for all classes before the first class session were 2.25 times more likely to pass at least one developmental math class than were students who did not report registering for all classes before the first class session, controlling for all other variables in the model.

Practice: Attending any orientation [*CCSSE* ppq2]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 36.4598 (df=4), *p* < .0001, N=1,773

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Attending any orientation	1	1.51	1.214	1.878	0.0002
Enrollment status	1	1.08	0.865	1.357	0.4858
Traditional age	1	1.25	0.999	1.555	0.0513
Generation status	1	0.66	0.536	0.814	<.0001

Interpretation: *CCSSE* developmental students who reported attending an online or on-campus orientation or who enrolled in an orientation course during their first term were 1.51 times more likely to pass at least one developmental math class than were students who did not participate in any type of orientation, controlling for all other variables in the model.

Practice: Attending any orientation [*CCSSE* ppq2]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 63.7740 (df=4), *p* < .0001, N=1,773

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Attending any orientation	1	1.61	1.276	2.028	<.0001
Enrollment status	1	1.32	1.045	1.655	0.0197
Traditional age	1	0.70	0.557	0.868	0.0013
Generation status	1	0.57	0.463	0.695	<.0001

Interpretation: *CCSSE* developmental students who reported attending an online or on-campus orientation or enrolled in an orientation course during their first term were 1.61 times more likely to pass at least one developmental English class than were students who did not participate in any type of orientation, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [*CCSSE* ppq3]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 25.7717 (df=4), *p* < .0001, N=1,736

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience during the first academic term	1	1.24	0.987	1.557	0.0646
Enrollment status	1	1.11	0.884	1.388	0.3750
Traditional age	1	1.25	0.998	1.557	0.0523
Generation status	1	0.65	0.528	0.803	<.0001

Interpretation: *CCSSE* developmental students who reported participating in a first-year experience during their first academic term were 1.24 times more likely to pass at least one developmental math class than were students who reported they did not participate in a first-year experience during their first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [*CCSSE* ppq3]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 105.9392 (df=4), *p* < .0001, N=1,736

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience during the first academic term	1	2.44	1.963	3.039	<.0001
Enrollment status	1	1.32	1.044	1.666	0.0205
Traditional age	1	0.73	0.584	0.917	0.0066
Generation status	1	0.56	0.458	0.693	<.0001

Interpretation: *CCSSE* developmental students who reported participating in a first-year experience course during their first academic term were 2.44 times more likely to pass at least one developmental English class than were students who reported they did not participate in a first-year experience course during their first academic term, controlling for all other variables in the model.

Practice: Participate in an organized learning community during first academic term [*CCSSE* ppq4]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 58.3285 (df=4), *p* <.0001, N=1,734

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in an organized learning community during the first academic term	1	1.59	1.178	2.139	0.0024
Enrollment status	1	1.39	1.099	1.746	0.0057
Traditional age	1	0.71	0.569	0.890	0.0028
Generation status	1	0.54	0.443	0.667	<.0001

Interpretation: *CCSSE* developmental students who reported participating in an organized learning community during their first academic term were 1.59 times more likely to pass at least one developmental English class than were students who reported they did not participate in an organized learning community during their first academic term, controlling for all other variables in the model.

Practice: Enroll in a student success course during first academic term [*CCSSE* ppq5]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 218.1360 (df=4), *p* < .0001, N=1,737

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enroll in a student success course during the first academic term	1	5.22	4.113	6.629	<.0001
Enrollment status	1	1.30	1.020	1.662	0.0340
Traditional age	1	0.65	0.515	0.826	0.0004
Generation status	1	0.53	0.428	0.661	<.0001

Interpretation: *CCSSE* developmental students who reported that they enrolled in a student success course during their first academic term were 5.22 times more likely to pass at least one developmental English class than were students who reported they did not enroll in a student success course during their first academic term, controlling for all other variables in the model.

Practice: Participate in accelerated or fast-track developmental education during the first
academic term [*CCSSE* ppq6]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 62.6176 (df=4), *p* < .0001, N=1,219

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in accelerated/ fast-track developmental education during the first academic	1	2.40	1.747	3.290	<.0001
Enrollment status	1	1.43	1.068	1.922	0.0165
Traditional age	1	0.76	0.576	0.988	0.0405
Generation status	1	0.56	0.441	0.718	<.0001

Interpretation: *CCSSE* developmental students who reported participating in accelerated or fast-track developmental education during their first academic term were 2.40 times more likely to pass at least one developmental English class than were students who reported they did not participate in accelerated or fast-track developmental education during their first academic term, controlling for all other variables in the model.

Practice: Require a placement test before a student can register for first academic term
[*CCSSE* ppq8]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 37.5499 (df=4), *p* <.0001, N=1,214

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Students were required to take a placement test and the student took the test before registering for their first academic term	1	2.10	1.566	2.815	<.0001
Enrollment status	1	1.24	0.932	1.656	0.1390
Traditional age	1	1.08	0.821	1.428	0.5747
Generation status	1	0.69	0.536	0.894	0.0048

Interpretation: *CCSSE* developmental students who reported they were required to take a placement test and that they took the test before registering for their first academic term were 2.10 times more likely to pass at least one developmental math class than were students who reported they were required to take a placement test but did not take the test, or reported a placement test was not required, controlling for all other variables in the model.

Practice: Require a placement test before a student can register for first academic term
[*CCSSE* ppq8]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 41.2117 (df=4), *p* <.0001, N=1,214

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Students were required to take a placement test and the student took the test before registering for their first academic term	1	1.42	1.041	1.946	0.0268
Enrollment status	1	1.43	1.066	1.912	0.0168
Traditional age	1	0.67	0.515	0.883	0.0042
Generation status	1	0.55	0.429	0.698	<.0001

Interpretation: *CCSSE* developmental students who reported they were required to take a placement test and that they took the test before registering for their first academic term were 1.42 times more likely to pass at least one developmental English class than were students who reported they were required to take a placement test but did not take the test, or reported a placement test was not required, controlling for all other variables in the model.

Practice: Placement test results indicate need for developmental education in one or more academic skills area [*CCSSE* ppq13]

Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 61.6097 (df=4), *p* <.0001, N=1,016

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Tested Into Developmental Education in one or more academic skills area	1	4.97	3.180	7.756	<.0001
Enrollment status	1	1.20	0.865	1.677	0.2714
Traditional age	1	1.24	0.908	1.703	0.1750
Generation status	1	0.72	0.539	0.965	0.0277

Interpretation: *CCSSE* developmental students who reported that their placement test results indicated the need for developmental education in one or more academic skills areas were 4.97 times more likely to pass at least one developmental math class than were students who reported that their placement test results indicated no need for developmental education, controlling for all other variables in the model.

Practice: Placement test results indicate need for developmental education in one or more academic skills area [*CCSSE* ppq13]

Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 39.0430 (df=4), *p* <.0001, N=1,016

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Tested into Developmental Education in one or more academic skills area	1	2.91	1.705	4.974	<.0001
Enrollment status	1	1.38	1.008	1.885	0.0447
Traditional age	1	0.71	0.533	0.941	0.0174
Generation status	1	0.60	0.464	0.783	0.0001

Interpretation: *CCSSE* developmental students who reported that their placement test results indicated the need for developmental education in one or more academic skills areas were 2.91 times more likely to pass at least one developmental English class than students who reported that their placement test results indicated no need for developmental education, controlling for all other variables in the model.

Practice: Placement test scores indicated the need for developmental education in at least one academic skills area [*CCSSE* ppq14]

Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 89.3712 (df=4), *p* <.0001, N=953

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student told they are required to take one or more developmental education courses during their first academic term	1	4.62	3.251	6.563	<.0001
Enrollment status	1	1.32	0.945	1.835	0.1044
Traditional age	1	0.77	0.570	1.036	0.0841
Generation status	1	0.61	0.466	0.808	0.0005

Interpretation: *CCSSE* developmental students who reported being required to take at least one developmental education course during their first academic term based on placement test results were 4.62 times more likely to pass at least one developmental English class than were students who reported they were told they should take at least one developmental education course during their first academic term, but it was not required, controlling for all other variables in the model.

Practice: Required to take at least one developmental course during their first term [*CCSSE* ppq15]

Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 21.4908 (df=4), *p* = 0.0003, N=908

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student enrolled in one or more required developmental education course during their first academic term	1	2.37	1.460	3.837	0.0005
Enrollment status	1	1.24	0.865	1.784	0.2404
Traditional age	1	1.40	0.983	1.989	0.0620
Generation status	1	0.73	0.532	0.987	0.0412

Interpretation: *CCSSE* developmental students who reported that they were told they were required to take a developmental education course during their first term and they enrolled in one or more of these courses during their first academic term were 2.37 times more likely to pass at least one developmental math class than were students who reported they did not enroll in a required developmental education course during their first academic term, controlling for all other variables in the model.

Practice: Required to take at least one developmental course during their first term [*CCSSE* ppq15]

Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 34.8084 (df=4), *p* = <.0001, N=908

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
Student enrolled in one or more required developmental education course during their first academic term	1	3.54	1.971	6.343	<.0001
Enrollment status	1	1.36	0.978	1.895	0.0677
Traditional age	1	0.78	0.578	1.056	0.1083
Generation status	1	0.63	0.484	0.830	0.0009

Interpretation: *CCSSE* developmental students who reported that they were told they were required to take a developmental education course during their first term and they enrolled in one or more of these courses during their first academic term were 3.54 times more likely to pass at least one developmental English class than were students who reported they did not enroll in a required developmental education course during their first academic term, controlling for all other variables in the model.

Practice: Before the end of the first academic term, an advisor helped develop an academic plan [*CCSSE* ppq16]

Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 18.6518 (df=4), *p* = 0.0009, N=1,204

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
Advisor helped to develop an academic plan before the end of the first academic term	1	1.33	1.038	1.698	0.0239
Enrollment status	1	1.22	0.915	1.623	0.1757
Traditional age	1	1.22	0.926	1.602	0.1591
Generation status	1	0.68	0.527	0.873	0.0026

Interpretation: *CCSSE* developmental students who reported that an advisor helped them develop an academic plan before the end of first academic term were 1.33 times more likely to pass at least one developmental math class than were students who reported they did not receive such assistance during their first academic term, controlling for all other variables in the model.

Practice: Before the end of the first academic term, an advisor helped develop an academic plan [*CCSSE* ppq16]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 41.8309 (df=4), *p* < .0001, N=1,204

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Advisor helped to develop an academic plan before the end of the first academic term	1	1.33	1.045	1.690	0.0205
Enrollment status	1	1.40	1.043	1.875	0.0249
Traditional age	1	0.66	0.503	0.864	0.0026
Generation status	1	0.54	0.422	0.687	<.0001

Interpretation: *CCSSE* developmental students who reported that an advisor helped them develop an academic plan before the end of first academic term were 1.33 times more likely to pass at least one developmental English class than were students who reported they did not receive such assistance during their first academic term, controlling for all other variables in the model.

Practice: Academic early warning [*CCSSE* ppq17]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 38.5028 (df=4), *p* < .0001, N=858

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Someone at the college contacts student if they are struggling with studies	1	1.67	1.228	2.267	0.0011
Enrollment status	1	1.26	0.891	1.772	0.1928
Traditional age	1	0.64	0.460	0.882	0.0066
Generation status	1	0.51	0.387	0.682	<.0001

Interpretation: *CCSSE* developmental students who reported that someone at the college contacted them if they were struggling academically to help them get the assistance they need were 1.67 times more likely to pass at least one developmental English class than were students who reported that someone did not contact them when they were struggling, controlling for all other variables in the model.

Practice: Participate in supplemental instruction [*CCSSE* ppq 20]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 17.6842 (df=4), *p* = 0.0014, N=1,217

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in supplemental instruction at least once during the current academic year	1	0.72	0.538	0.954	0.0225
Enrollment status	1	1.24	0.935	1.655	0.1338
Traditional age	1	1.19	0.905	1.559	0.2140
Generation status	1	0.67	0.523	0.865	0.0020

Interpretation: *CCSSE* developmental students who reported participating in supplemental instruction during the current academic year were 0.72 times as likely to pass at least one developmental math class as students who reported never participating in supplemental instruction during the current academic year, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 47.9994 (df=4), *p* <.0001, N=1,144

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Using online or printed materials to prepare for the placement test and finding those materials helpful	1	1.56	1.194	2.047	0.0011
Enrollment status	1	1.43	1.060	1.936	0.0192
Traditional age	1	0.68	0.511	0.891	0.0055
Generation status	1	0.51	0.400	0.659	<.0001

Interpretation: *CCSSE* developmental students who reported using online or printed materials to prepare for the placement test and finding those materials helpful were 1.56 times more likely to pass at least one developmental English class than were students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 32.5213 (df=4), *p* <.0001, N=1,087

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a brief, intensive brush-up workshop and found it helpful	1	0.44	0.278	0.680	0.0003
Enrollment status	1	1.42	1.047	1.916	0.0238
Traditional age	1	1.23	0.925	1.645	0.1524
Generation status	1	0.59	0.454	0.773	0.0001

Interpretation: *CCSSE* developmental students who reported participating in a brief, intensive brush-up workshop and finding it helpful were 0.44 times as likely to pass at least one developmental math class as students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 40.0990 (df=4), *p* <.0001, N=1,087

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a brief, intensive brush-up workshop and found it helpful	1	1.77	1.135	2.761	0.0117
Enrollment status	1	1.53	1.114	2.092	0.0086
Traditional age	1	0.74	0.556	0.982	0.0369
Generation status	1	0.55	0.425	0.710	<.0001

Interpretation: *CCSSE* developmental students who reported participating in a brief, intensive brush-up workshop and found it helpful were 1.77 times more likely to pass at least one developmental English class than were students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 24.5118 (df=4), *p* <.0001, N=1,079

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a multi-day or multi-week brush-up program and found it helpful	1	0.55	0.334	0.906	0.0188
Enrollment status	1	1.43	1.056	1.936	0.0207
Traditional age	1	1.21	0.910	1.618	0.1884
Generation status	1	0.61	0.463	0.790	0.0002

Interpretation: *CCSSE* developmental students who reported participating in a multi-day or multi-week brush-up program and found it helpful were 0.55 times as likely to pass at least one developmental math class as students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 45.5077 (df=4), *p* <.0001, N=1,079

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a multi-day or multi-week brush-up program and found it helpful	1	2.21	1.337	3.638	0.0019
Enrollment status	1	1.59	1.158	2.188	0.0042
Traditional age	1	0.74	0.560	0.989	0.0420
Generation status	1	0.54	0.421	0.703	<.0001

Interpretation: *CCSSE* developmental students who reported participating in a multi-day or multi-week brush-up program and found it helpful were 2.21 times more likely to pass at least one developmental English class than were students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Participate in an internship, field experience, co-op experience, or clinical assignment [*CCSSE* main q8a]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 54.8079 (df=4), *p* <.0001, N=1,916

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in an internship, field experience, co-op experience, or clinical assignment	1	0.71	0.521	0.972	0.0327
Enrollment status	1	1.34	1.079	1.668	0.0083
Traditional age	1	0.72	0.579	0.882	0.0018
Generation status	1	0.56	0.463	0.681	<.0001

Interpretation: *CCSSE* developmental students who reported they participated in an internship, field experience, or coop experience were 0.71 times as likely to pass at least one developmental English class as students who reported they either planned to participate or that they have not participated nor planned to participate in an internship, field experience, or coop experience, controlling for all other variables in the model.

Practice: Participate in a study skills course [*CCSSE* main q8f]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 152.4987 (df=4), *p* <.0001, N=1,925

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a study skills course	1	3.12	2.519	3.851	<.0001
Enrollment status	1	1.29	1.030	1.611	0.0267
Traditional age	1	0.67	0.535	0.826	0.0002
Generation status	1	0.53	0.437	0.652	<.0001

Interpretation: *CCSSE* developmental students who reported they participated in a study skills course were 3.12 times more likely to pass at least one developmental English class than were students who reported they either planned to participate or that they have not participated nor planned to participate in a study skills course, controlling for all other variables in the model.

Practice: Participate in an orientation program or course [*CCSSE* main q8h]
Results for *CCSSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 28.8919 (df=4), *p* <.0001, N=1,910

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in an orientation program or course	1	1.33	1.096	1.616	0.0039
Enrollment status	1	1.07	0.861	1.324	0.5510
Traditional age	1	1.22	0.983	1.501	0.0712
Generation status	1	0.67	0.547	0.815	<.0001

Interpretation: *CCSSE* developmental students who reported they participated in an orientation program or course were 1.33 times more likely to pass at least one developmental math course than were students who reported they either planned to participate or that they have not participated nor planned to participate in an orientation program, controlling for all other variables in the model.

Practice: Participate in an orientation program or course [*CCSSE* main q8h]
Results for *CCSSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 59.7835 (df=4), *p* <.0001, N=1,910

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in an orientation program or course	1	1.34	1.105	1.620	0.0028
Enrollment status	1	1.31	1.049	1.627	0.0168
Traditional age	1	0.68	0.550	0.840	0.0004
Generation status	1	0.55	0.449	0.662	<.0001

Interpretation: *CCSSE* developmental students who reported they participated in an orientation program or course were 1.34 times more likely to pass at least one developmental English class than were students who reported they either planned to participate or that they have not participated nor planned to participate in an orientation program, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [SENSE ppq2]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 77.3015 (df=4), *p* <.0001, N= 847

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience during the first academic term	1	3.65	2.699	4.934	<.0001
Enrollment Status	1	1.36	1.006	1.836	0.0454
Traditional Age	1	0.91	0.660	1.256	0.5667
Generation Status	1	0.83	0.620	1.102	0.1951

Interpretation: *SENSE* developmental students who reported they were participating in a first-year experience during their first academic term were 3.65 times more likely to pass at least one developmental English class than were students who reported they were not participating in a first-year experience, controlling for all other variables in the model.

Practice: Attendance policy clearly explained by all instructors [SENSE ppq4]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 20.9225 (df=4), *p* = 0.0003, N= 848

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
All instructors clearly explained a class attendance policy	1	2.96	1.125	7.773	0.0279
Enrollment Status	1	1.09	0.813	1.453	0.5751
Traditional Age	1	1.91	1.390	2.618	<.0001
Generation Status	1	1.09	0.827	1.443	0.5343

Interpretation: *SENSE* developmental students who report that all of their instructors clearly explained a class attendance policy that specified how many classes they could miss without penalty were 2.96 times more likely to pass at least one developmental math class than those who reported that only some or none of their instructors clearly explained an attendance policy, controlling for all other variables in the model.

Practice: Awareness that a placement test was required [SENSE ppq5]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 9.2719 (df=4), *p* = 0.0547, N= 321

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student became aware they were required to take a placement test more than one month prior to taking the test	1	1.80	1.110	2.914	0.0172
Enrollment status	1	0.94	0.589	1.483	0.7741
Traditional age	1	1.66	1.011	2.736	0.0452
Generation status	1	1.28	0.809	2.012	0.2953

Interpretation: *SENSE* developmental students who reported that they became aware that they were required to take a placement test more than a month before taking the test were 1.80 times more likely to pass at least one developmental math class than were students who reported that they were not aware that a placement test was required until less than one month before taking the test, controlling for all other variables in the model.

Practice: Telling students they are required to take a developmental education course [SENSE ppq9]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 16.2526 (df=4), *p* = 0.0027, N= 799

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student told they are required to take a developmental education course during their first academic term & student enrolls in one or more required courses	1	2.27	0.896	5.733	0.0840
Enrollment Status	1	1.08	0.801	1.461	0.6067
Traditional Age	1	1.79	1.292	2.486	0.0005
Generation Status	1	1.12	0.841	1.491	0.4399

Interpretation: *SENSE* developmental students who reported that they were required to take a developmental education course during their first academic term and enrolled in one or more required course were 2.27 times more likely to pass at least one developmental math class than were students who reported they did not enroll in the required developmental education courses, controlling for all other variables in the model.

Practice: Require enrollment in classes indicated by placement test results during the first academic term [SENSE ppq 9]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 11.0988 (df=4), *p* = 0.0255, N= 799

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Required to enroll in classes during the first academic term as indicated by placement test scores	1	2.11	0.833	5.347	0.1155
Enrollment Status	1	1.50	1.116	2.022	0.0072
Traditional Age	1	0.93	0.679	1.280	0.6662
Generation Status	1	0.92	0.696	1.228	0.5872

Interpretation: *SENSE* developmental students who reported that they were required to enroll in developmental education during the first academic term based on their placement test results were 2.11 times more likely to pass at least one developmental English class than were students who reported they were not required to enroll in courses indicated by their placement test scores, controlling for all other variables in the model.

Practice: Add or drop any classes within the first three weeks of the first academic term [SENSE main q8]

Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 49.1477 (df=4), *p* <.0001, N= 2942

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Added/dropped at least one class with or without discussing the decision with a staff member/instructor	1	0.44	0.344	0.572	<.0001
Enrollment Status	1	1.12	0.953	1.315	0.1702
Traditional Age	1	1.31	1.089	1.570	0.0040
Generation Status	1	0.96	0.830	1.118	0.6238

Interpretation: *SENSE* developmental students who reported they added or dropped at least one class during the first three weeks of their first term with or without discussing the decision with a staff member or instructor were 0.44 times as likely to pass at least one developmental math class as students who reported they did not add or drop any classes during the first three weeks of their first academic term, controlling for all other variables in the model.

Practice: Add or drop any classes within the first three weeks of the first academic term [SENSE main q8]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 32.1931 (df=4), *p* <.0001, N= 2942

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Adding/dropping at least one class during first three weeks of first academic term	1	0.71	0.559	0.912	0.0070
Enrollment Status	1	0.84	0.719	0.992	0.0391
Traditional Age	1	0.89	0.742	1.072	0.2228
Generation Status	1	0.71	0.612	0.826	<.0001

Interpretation: *SENSE* developmental students who reported they added or dropped at least one class during the first three weeks of their first term with or without discussing the decision with a staff member or instructor were 0.71 times as likely to pass at least one developmental English class as students who reported they did not add or drop any classes during the first three weeks of their first academic term, controlling for all other variables in the model.

Practice: Dropping courses after the first day of class during the first academic term [SENSE main q9]

Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 37.7921 (df=4), *p* <.0001, N= 2,934

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Dropped at least one course after the first day of class during the first academic term	1	0.40	0.285	0.563	<.0001
Enrollment Status	1	1.12	0.954	1.317	0.1643
Traditional Age	1	1.30	1.087	1.564	0.0043
Generation Status	1	0.96	0.831	1.119	0.6290

Interpretation: *SENSE* developmental students who reported that they dropped one or more courses after the first class session during their first academic term were 0.40 times as likely to pass at least one developmental math class as students who reported that they dropped no courses after the first class session during their first academic term, controlling for all other variables in the model.

Practice: Registering for all courses more than one week before the first class session [SENSE main q10]

Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 25.8320 (df=4), p<*.0001*, N= 2,947

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Register for all classes more than one week before the first class session	1	1.62	1.268	2.056	<.0001
Enrollment Status	1	1.12	0.953	1.314	0.1700
Traditional Age	1	1.30	1.080	1.552	0.0052
Generation Status	1	0.94	0.814	1.095	0.4473

Interpretation: *SENSE* developmental students who report that they registered for all courses more than one week before the first class session were 1.62 times more likely to pass at least one developmental math class than were students who did not report registering for all courses more than one week before the first class session, controlling for all other variables in the model.

Practice: Take a placement test [SENSE main 12b]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 14.9109 (df=4), *p* = 0.0049, N= 2, 2880

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Took a placement test	1	1.32	0.962	1.805	0.0858
Enrollment status	1	1.13	0.965	1.334	0.1265
Traditional age	1	1.35	1.118	1.618	0.0017
Generation status	1	0.95	0.821	1.108	0.5372

Interpretation: *SENSE* developmental students who reported that they took a placement test were 1.32 times more likely to pass at least one developmental math class than were students who reported that they did not take a placement test, controlling for all other variables in the model.

Practice: Require enrollment in classes indicated by placement test scores during the first academic term [SENSE main q14]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 21.7671 (df=4), *p* = 0.0002, N= 2,903

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Require students to enroll in classes indicated by placement test scores during the first academic term	1	1.48	1.157	1.884	0.0017
Enrollment status	1	1.16	0.984	1.359	0.0784
Traditional age	1	1.32	1.098	1.583	0.0030
Generation status	1	0.96	0.827	1.116	0.6005

Interpretation: *SENSE* developmental students who reported they were required to enroll in classes indicated by their placement test scores during their first academic term were 1.48 times more likely to pass at least one developmental math class than were students who reported they were not required to enroll in classes indicated by placement test scores during their first academic term, controlling for all other variables in the model.

Practice: Require enrollment in classes indicated by placement test scores during the first academic term [SENSE main q14]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 101.8849 (df=4), *p* <.0001, N= 2,903

| Effect | Unit | OR Estimate | 95% Confidence Limits | | Pr > ChiSquare |
			Lower	Upper	
Require students to enroll in classes indicated by placement test scores during the first academic term	1	3.89	2.868	5.277	<.0001
Enrollment status	1	0.81	0.688	0.957	0.0130
Traditional age	1	0.88	0.725	1.056	0.1642
Generation status	1	0.71	0.612	0.830	<.0001

Interpretation: *SENSE* developmental students who reported they were required to enroll in classes indicated by their placement test scores during their first academic term were 3.89 times more likely to pass at least one developmental English class than were students who reported they were not required to enroll in classes indicated by placement test scores during their first academic term, controlling for all other variables in the model.

Practice: Enroll in an organized learning community during the first academic term [SENSE main q17f]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 57.4191 (df=4), *p* <.0001, N= 2,803

| Effect | Unit | OR Estimate | 95% Confidence Limits | | Pr > ChiSquare |
			Lower	Upper	
Enrolled in an organized learning community during the first academic term	1	2.58	1.876	3.547	<.0001
Enrollment status	1	0.84	0.709	0.989	0.0365
Traditional age	1	0.89	0.738	1.081	0.2446
Generation status	1	0.70	0.602	0.819	<.0001

Interpretation: *SENSE* developmental students who reported that they enrolled in an organized learning community during their first academic term were 2.58 times more likely to pass at least one developmental English class than were students who reported they did not enroll in an organized learning community during their first academic term, controlling for all other variables in the model.

Practice: Meeting academic advisor at convenient times [SENSE main 18d]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 27.2556 (df=4), *p* <.0001, N= 2,915

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Meet with an advisor at times convenient for the student	1	1.19	1.014	1.400	0.0334
Enrollment status	1	0.85	0.727	1.004	0.0556
Traditional age	1	0.88	0.733	1.062	0.1861
Generation status	1	0.72	0.617	0.833	<.0001

Interpretation: *SENSE* developmental students who agreed or strongly agreed that they were able to meet with an advisor at a time that was convenient to them were 1.19 times more likely to pass at least one developmental English class than were students who reported a neutral response, disagreed, or strongly disagreed that they were able to meet academic advisor at a convenient time, controlling for all other variables in the model.

Practice: Advisor helps select a course of study, program, or major [SENSE main q18e]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 14.7358 (df=4), *p*= 0.0053, N= 2,925

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Advisor helps to select a course of study, program, or major	1	0.87	0.749	1.018	0.0843
Enrollment status	1	1.15	0.982	1.354	0.0831
Traditional age	1	1.32	1.097	1.578	0.0031
Generation status	1	0.95	0.818	1.100	0.4842

Interpretation: *SENSE* developmental students who agreed or strongly agreed that an advisor helped them to select a course of study, program, or major were 0.87 times as likely to pass at least one developmental math class as students who reported a neutral response, disagreed, or strongly disagreed that an advisor helped to select a course of study, program, or major, controlling for all other variables in the model.

Practice: Advisor helps select a course of study, program, or major [SENSE main q18e]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 30.7295 (df=4), *p* <.0001, N= 2,925

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Advisor helps student select a course of study, program, or major	1	1.21	1.038	1.419	0.0153
Enrollment status	1	0.84	0.718	0.992	0.0395
Traditional age	1	0.88	0.730	1.057	0.1700
Generation status	1	0.71	0.610	0.824	<.0001

Interpretation: *SENSE* developmental students who agreed or strongly agreed that an advisor helped them to select a course of study, program, or major were 1.21 times more likely to pass at least one developmental English class than were students who reported a neutral response, disagreed, or strongly disagreed that an advisor helped to select a course of study, program, or major, controlling for all other variables in the model.

Practice: Advisor helps student set academic goals and create a plan for achieving them [SENSE main q18f]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 33.5192 (df=4), *p* <.0001, N= 2,921

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Advisor helps student set academic goals and create a plan for achieving them	1	1.26	1.090	1.465	0.0020
Enrollment status	1	0.84	0.714	0.987	0.0337
Traditional age	1	0.88	0.728	1.054	0.1616
Generation status	1	0.72	0.615	0.831	<.0001

Interpretation: *SENSE* developmental students who agreed or strongly agreed that an advisor helped them set academic goals and create a plan to achieve them were 1.26 times more likely to pass at least one developmental English class than were students who reported a neutral response, disagreed, or strongly disagreed that an advisor helped them set academic goals and create a plan to achieve them, controlling for all other variables in the model.

Practice: Advisor helps student identify courses needed to take during first term.
Results for *SENSE* respondents – Passing developmental English [SENSE main q18g]

Overall Model: Wald Chi-Square 28.4140 (df=4), *p* <.0001, N= 2,928

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Advisor helps student identify the courses to take during their first academic term	1	1.19	0.988	1.426	0.0663
Enrollment status	1	0.85	0.721	0.996	0.0440
Traditional age	1	0.89	0.736	1.066	0.1995
Generation status	1	0.71	0.608	0.821	<.0001

Interpretation: *SENSE* developmental students who agreed or strongly agreed that an advisor helped them identify the courses they needed their first academic term were 1.19 times more likely to pass at least one developmental English class than were students who reported a neutral response, disagreed, or strongly disagreed that an advisor helped them identify the courses they needed for first their first term, controlling for all other variables in the model.

Practice: Staff member talks with students about commitments outside of school work [SENSE main q18h]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 31.1379 (df=4), *p* <.0001, N= 2,929

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
A college staff member talks with students about their commitments outside of school work	1	1.22	1.039	1.430	0.0151
Enrollment status	1	0.86	0.730	1.007	0.0615
Traditional age	1	0.88	0.731	1.058	0.1718
Generation status	1	0.71	0.609	0.821	<.0001

Interpretation: *SENSE* developmental students who agreed or strongly agreed that a college staff member talked with them about commitments outside of school to help them figure out how many courses to take were 1.22 times more likely to pass at least one developmental English class than were students who reported a neutral response, disagreed, or strongly disagreed that a college staff member talked with them about commitments outside of school, controlling for all other variables in the model.

Practice: Instructors clearly explain academic and support services available [SENSE main q18l]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 36.3192 (df=4), *p* <.0001, N= 2,923

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
All instructors clearly explain academic and student services available at the college	1	1.33	1.125	1.572	0.0008
Enrollment status	1	0.86	0.729	1.008	0.0619
Traditional age	1	0.88	0.734	1.061	0.1843
Generation status	1	0.71	0.608	0.820	<.0001

Interpretation: *SENSE* developmental students who agreed or strongly agreed that all of their instructors clearly explained academic and support services available at the college were 1.33 times more likely to pass at least one developmental English class than those who reported a neutral response, disagreed, or strongly disagreed that all of their instructors explained academic and support services available, controlling for all other variables in the model.

Practice: Participate in supplemental instruction [SENSE main q19e]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 34.8454 (df=4), *p* <.0001, N= 2,936

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
Participate in supplemental instruction during the first academic term at least once	1	1.30	1.113	1.509	0.0009
Enrollment status	1	0.84	0.718	0.992	0.0392
Traditional age	1	0.87	0.725	1.049	0.1466
Generation status	1	0.72	0.620	0.836	<.0001

Interpretation: *SENSE* developmental students who reported that they participated in supplemental instruction at least once during the first three weeks of their first academic term were 1.3 times more likely to pass at least one developmental English class than were students who reported that they never participated in supplemental instruction during their first three weeks, controlling for all other variables in the model.

Practice: Work with other students on a project or assignment during class [SENSE main q19g]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 28.4917(df=4), *p* <.0001, N= 2,934

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Work with other students on a project or assignment during class at least once	1	1.22	1.014	1.473	0.0355
Enrollment status	1	0.83	0.710	0.981	0.0283
Traditional age	1	0.88	0.731	1.056	0.1673
Generation status	1	0.72	0.615	0.830	<.0001

Interpretation: *SENSE* developmental students who reported that they worked with other students on a project or assignment during class at least once during the first three weeks of their first academic term were 1.22 times more likely to pass at least one developmental English class than were students who reported that they never worked with other students on a project or assignment during class during their first three weeks, controlling for all other variables in the model.

Practice: Work with classmates outside of class on class projects or assignments [SENSE main q19h]

Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square 16.5944(df=4), *p* = 0.0023, N= 2,932

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Work with classmates outside of class on class projects or assignments at least once	1	1.20	1.028	1.396	0.0206
Enrollment status	1	1.11	0.945	1.305	0.2045
Traditional age	1	1.33	1.111	1.599	0.0020
Generation status	1	0.96	0.828	1.114	0.5929

Interpretation: *SENSE* developmental students who reported working with classmates outside of class on class projects or assignments at least once during the first three weeks of their first academic term were 1.20 times more likely to pass at least one developmental math class than were students who reported that they never worked with classmates outside of class on class projects or assignments during their first three weeks, controlling for all other variables in the model.

Practice: Work with classmates outside of class on class projects or assignments [SENSE main q19h]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 32.7170 (df=4), *p* <.0001, N= 2,932

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Work with classmates outside of class on class projects or assignments at least once	1	1.26	1.078	1.467	0.0036
Enrollment status	1	0.84	0.711	0.984	0.0313
Traditional age	1	0.91	0.752	1.088	0.2873
Generation status	1	0.71	0.612	0.827	<.0001

Interpretation: *SENSE* developmental students who reported that they worked with classmates outside of class on class projects or assignments at least once during the first three weeks of their first academic term were 1.26 times more likely to pass at least one developmental English class than were students who reported that they never worked with classmates outside of class on class projects or assignments during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a required study group outside of class [SENSE main q19i]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square 35.2589 (df=4), *p* <.0001, N= 2,934

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a required study group outside of class at least once	1	1.40	1.158	1.686	0.0005
Enrollment status	1	0.85	0.720	0.995	0.0437
Traditional age	1	0.90	0.746	1.080	0.2528
Generation status	1	0.72	0.615	0.830	<.0001

Interpretation: *SENSE* developmental students who reported that they participated in a required study group outside of class at least once during the first three weeks of their first academic term were 1.40 times more likely to pass at least one developmental English class than were students who reported that they never participated in a required study group outside of class during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a student-initiated (not required) study group outside of class [SENSE main q19j]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   31.7720 (df=4), *p* <.0001, N= 2,919

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
Participate in a student-initiated study group outside of class at least once	1	1.31	1.087	1.574	0.0045
Enrollment status	1	0.85	0.719	0.993	0.0414
Traditional age	1	0.89	0.743	1.075	0.2313
Generation status	1	0.71	0.612	0.827	<.0001

Interpretation: *SENSE* developmental students who report that they participated in a student-initiated (not required) study group outside of class at least once during the first three weeks of their first academic term were 1.31 times more likely to pass at least one developmental English class than were students who reported that they never participated in a student-initiated study group outside of class during their first three weeks, controlling for all other variables in the model.

Practice: Use academic advising/planning services [SENSE main q20a]

Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square   18.7724 (df=4), *p* = 0.0009, N= 2,850

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
Used academic advising/ planning services at least once before the end of the first three weeks of the first academic term	1	1.23	1.047	1.433	0.0114
Enrollment status	1	1.14	0.964	1.336	0.1291
Traditional age	1	1.32	1.094	1.587	0.0036
Generation status	1	0.95	0.817	1.103	0.4974

Interpretation: *SENSE* developmental students who reported that they used academic advising/planning services at least once between the time they decided to attend the college and the end of the first three weeks of their first term were 1.23 times more likely to pass at least one developmental math class than were students who reported that they never used academic advising/planning services before the end of their first three weeks, controlling for all other variables in the model.

Practice: Use face-to-face tutoring [SENSE main q20d]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   25.3040 (df=4), *p* <.0001, N= 2,833

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used face-to-face tutoring at least once before the end of the first three weeks of the first academic term	1	1.20	0.991	1.443	0.0617
Enrollment status	1	0.86	0.726	1.009	0.0640
Traditional age	1	0.89	0.737	1.074	0.2245
Generation status	1	0.72	0.618	0.838	<.0001

Interpretation: *SENSE* developmental students who reported that they used face-to-face tutoring at least once during the first three weeks of their first academic term were 1.20 times more likely to pass at least one developmental English class than were students who reported that they never used face-to-face tutoring during their first three weeks, controlling for all other variables in the model.

Practice: Use online tutoring [SENSE main q20e]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   25.2307 (df=4), *p* <.0001, N= 2,766

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used online tutoring at least once before the end of the first three weeks of the first academic term	1	1.40	1.069	1.826	0.0142
Enrollment status	1	0.87	0.733	1.022	0.0886
Traditional age	1	0.88	0.727	1.066	0.1915
Generation status	1	0.73	0.628	0.855	<.0001

Interpretation: *SENSE* developmental students who reported that they used online tutoring at least once during the first three weeks of their first academic term were 1.40 times more likely to pass at least one developmental English class than were students who reported that they never used online tutoring during their first three weeks, controlling for all other variables in the model.

Practice: Use writing, math, or other skill lab [SENSE main q20f]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   92.8312 (df=4), *p* <.0001, N= 2,828

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used writing, math, or other skill lab at least once before the end of the first three weeks of the first academic term	1	1.95	1.672	2.273	<.0001
Enrollment status	1	0.79	0.668	0.932	0.0053
Traditional age	1	0.88	0.728	1.064	0.1878
Generation status	1	0.77	0.655	0.893	0.0007

Interpretation: *SENSE* developmental students who reported that they used a writing, math, or other skill lab at least once during the first three weeks of their first academic term were 1.95 times more likely to pass at least one developmental English class than were students who reported that they never used a writing, math, or other skill lab during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a student organization [SENSE main q20i]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   34.6027 (df=4), *p* <.0001, N= 2,781

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a student organization at least once before the end of the first three weeks of the first academic term	1	1.53	1.238	1.898	<.0001
Enrollment status	1	0.83	0.704	0.982	0.0296
Traditional age	1	0.92	0.757	1.107	0.3614
Generation status	1	0.74	0.631	0.859	0.0001

Interpretation: *SENSE* developmental students who reported that they participated in a student organization at least once during the first three weeks of their first academic term were 1.53 times more likely to pass at least one developmental English class than were students who reported that they never participated in a student organization during their first three weeks, controlling for all other variables in the model.

Practice: Learned to improve study skills within a class or through another experience [SENSE q21a]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   56.0581 (df=4), *p* <.0001, N= 2,942

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned to improve study skills	1	1.73	1.429	2.092	<.0001
Enrollment status	1	0.85	0.719	0.993	0.0405
Traditional age	1	0.89	0.736	1.065	0.1954
Generation status	1	0.72	0.620	0.838	<.0001

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that within a class or through another experience at their college, they learning to improve their study skills were 1.73 times more likely to pass at least one developmental English class than were students who responded "neutral", "disagree", or "strongly disagree" that they learned to improve their study skills, controlling for all other variables in the model.

Practice: Learned to understand academic strengths and weaknesses within a class or through another experience [SENSE main q21b]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   54.2669 (df=4), *p* <.0001, N= 2,941

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned to understand their academic strengths and weaknesses	1	1.65	1.379	1.970	<.0001
Enrollment status	1	0.84	0.714	0.987	0.0337
Traditional age	1	0.90	0.747	1.080	0.2543
Generation status	1	0.72	0.619	0.836	<.0001

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that within a class or through another experience at their college, they learned to understand their academic strengths and weaknesses were 1.65 times more likely to pass at least one developmental English class than were students who responded "neutral", "disagree", or "strongly disagree" that they learned to understand their academic strengths and weaknesses, controlling for all other variables in the model.

Practice: Learned skills and strategies to improve test-taking ability within a class or through another experience [SENSE main q21c]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   59.1655 (df=4), *p* <.0001, N= 2,940

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned skills and strategies to improve test-taking abilities	1	1.59	1.362	1.855	<.0001
Enrollment status	1	0.83	0.706	0.976	0.0246
Traditional age	1	0.91	0.755	1.092	0.3064
Generation status	1	0.72	0.622	0.840	<.0001

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that within a class or through another experience at the college, they learned skills and strategies to improve their test-taking ability were 1.59 times more likely to pass at least one developmental English class than were students who responded "neutral", "disagree", or "strongly disagree" that they learned skills and strategies to improve their test-taking ability, controlling for all other variables in the model.

Practice: Participate in any orientation [SENSE main q11]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square   58.6755 (df=4), *p* <.0001, N= 2,896

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Took part in an online or on-campus orientation before the beginning of classes, or enrolled in an orientation course during the first academic term	1	1.88	1.570	2.248	<.0001
Enrollment status	1	1.13	0.964	1.334	0.1298
Traditional age	1	1.37	1.138	1.647	0.0009
Generation status	1	0.96	0.823	1.111	0.5588

Interpretation: *SENSE* developmental students who reported that they participated in an online or on-campus orientation or enrolled in an orientation course during their first academic term were 1.88 times more likely to pass at least one developmental math class than were students who indicated that they did not participate in any orientation, controlling for all other variables in the model.

Practice: Participate in any orientation [SENSE main q11]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   87.5137 (df=4), *p* <.0001, N= 2,896

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Took part in an online or on-campus orientation before the beginning of classes, or enrolled in an orientation course during the first academic term	1	2.14	1.771	2.575	<.0001
Enrollment status	1	0.83	0.705	0.979	0.0269
Traditional age	1	0.93	0.768	1.119	0.4321
Generation status	1	0.70	0.602	0.816	<.0001

Interpretation: *SENSE* developmental students who reported that they participated in an online or on-campus orientation or enrolled in an orientation course during their first academic term were 2.14 times more likely to pass at least one developmental English class than were students who indicated that they did not participate in any orientation, controlling for all other variables in the model.

Practice: Enrolled in a student success course during the first academic term [SENSE main 17e]
Results for *SENSE* respondents – Passing developmental math

Overall Model: Wald Chi-Square   30.1306 (df=4), *p* <.0001, N= 2,834

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enrolled in a course specifically designed to teach skills & strategies to help students succeed (student success course) during the first academic term	1	1.40	1.199	1.624	<.0001
Enrollment status	1	1.17	0.991	1.377	0.0633
Traditional age	1	1.32	1.097	1.592	0.0033
Generation status	1	0.97	0.831	1.125	0.6636

Interpretation: *SENSE* developmental students who reported that they enrolled in a course specifically designed to teach skills and strategies to help students succeed in college (student success course) during their first academic term were 1.40 times more likely to pass at least one developmental math class than were students who reported that they did not participate in a student success course, controlling for all other variables in the model.

Practice: Enrolled in a student success course during the first academic term [SENSE main 17e]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   343.9815 (df=4), *p* <.0001, N= 2,834

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enrolled in a course specifically designed to teach skills & strategies to help students succeed (student success course) during the first academic term	1	4.49	3.814	5.275	<.0001
Enrollment status	1	0.79	0.663	0.941	0.0084
Traditional age	1	0.91	0.741	1.106	0.3301
Generation status	1	0.72	0.610	0.845	<.0001

Interpretation: *SENSE* developmental students who reported that they enrolled in a course specifically designed to teach skills and strategies to help students succeed in college (student success course) were 4.49 times more likely to pass at least one developmental English class than were students who reported that they did not participate in a student success course, controlling for all other variables in the model.

Practice: Use in face-to-face **or** online tutoring [SENSE main q20d & q20e]

Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   25.1802 (df=4), *p* <.0001, N= 2,780

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used face-to-face or online tutoring at least once before the end of the first three weeks of the first academic term	1	1.23	1.030	1.465	0.0219
Enrollment status	1	0.86	0.730	1.017	0.0778
Traditional age	1	0.88	0.730	1.069	0.2025
Generation status	1	0.73	0.625	0.850	<.0001

Interpretation: *SENSE* developmental students who reported that they used face-to-face or online tutoring at least once during the first three weeks of their first academic term were 1.23 times more likely to pass at least one developmental English class than were students who reported that they never used face-to-face or online tutoring during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during their first academic term [SENSE ppq2 & main q17e]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   169.1321 (df=4), *p* <.0001, N= 1,537

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience or student success course during the first academic term	1	6.22	4.686	8.253	<.0001
Enrollment status	1	0.85	0.669	1.073	0.1687
Traditional age	1	1.12	0.860	1.469	0.3927
Generation status	1	0.70	0.562	0.870	0.0013

Interpretation: *SENSE* developmental students who reported that they were participating in a first-year experience or student success course during their first academic term were 6.22 times more likely to pass at least one developmental English class than were students who reported that they were not participating in either a first-year experience or student success course during their first academic term, controlling for all other variables in the model.

Practice: Participate in accelerated or fast-track developmental education [SENSE ppq3]
Results for *SENSE* respondents – Passing developmental English

Overall Model: Wald Chi-Square   24.5246 (df=4), *p* <.0001, N= 847

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more accelerated/fast-track programs to help student move through developmental education requirements more quickly	1	1.81	1.359	2.407	<.0001
Enrollment status	1	1.44	1.077	1.924	0.0139
Traditional age	1	1.00	0.733	1.361	0.9929
Generation status	1	0.83	0.627	1.093	0.1833

Interpretation: *SENSE* developmental students who reported that they were participating in one or more accelerated or fast-track programs to help them move through developmental education more quickly were 1.81 times more likely to pass at least one developmental English class than were students who reported that they were not participating in accelerated or fast-track developmental education, controlling for all other variables in the model.

Outcome 2: Completion of a Gatekeeper Course with a Grade of C or Better

NOTE: All analyses in this section include only developmental students.

Practice: Registration before classes begin [*CCSSE* ppq1]
Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 12.8742 (df=4), *p* =0.0119, N= 1777

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Registered for all classes before the first class session	1	1.93	1.275	2.930	0.0019
Enrollment status	1	1.12	0.894	1.406	0.3233
Traditional age	1	1.20	0.963	1.484	0.1058
Generation status	1	1.06	0.862	1.299	0.5902

Interpretation: *CCSSE* developmental students who reported that they registered for all classes before the first class session were 1.93 times more likely to pass a gatekeeper math class than were students who did not report registering for all classes before the first class session, controlling for all other variables in the model.

Practice: Registration before classes begin [*CCSSE* ppq1]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 26.6071 (df=4), *p* < .0001, N= 1777

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Registered for all classes before the first class session	1	1.48	0.949	2.297	0.0840
Enrollment status	1	1.58	1.214	2.054	0.0007
Traditional age	1	0.87	0.679	1.103	0.2420
Generation status	1	0.70	0.558	0.870	0.0015

Interpretation: *CCSSE* developmental students who reported that they registered for all classes before the first class session were 1.48 times more likely to pass a gatekeeper English class than were students who did not report registering for all classes before the first class session, controlling for all other variables in the model.

Practice: Attending any orientation [*CCSSE* ppq2]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 27.8835 (df=4), *p* < .0001, N=1,773

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in any orientation	1	1.30	1.004	1.676	0.0469
Enrollment status	1	1.56	1.195	2.026	0.0010
Traditional age	1	0.87	0.684	1.115	0.2768
Generation status	1	0.70	0.561	0.877	0.0019

Interpretation: *CCSSE* developmental students who reported that they attended an online or on-campus orientation or enrolled in an orientation course during their first term were 1.30 times more likely to pass a gatekeeper English class than were students who did not participate in any type of orientation, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [*CCSSE* ppq3]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 55.4761 (df=4), *p* < .0001, N=1,736

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience during the first academic term	1	2.00	1.580	2.524	<.0001
Enrollment status	1	1.53	1.174	2.001	0.0017
Traditional age	1	0.92	0.715	1.173	0.4885
Generation status	1	0.70	0.560	0.881	0.0022

Interpretation: *CCSSE* developmental students who reported that they participated in a first-year experience during their first academic term were 2.00 times more likely to pass a gatekeeper English class than were students who reported they did not participate in a first-year experience during their first academic term, controlling for all other variables in the model.

Practice: Participate in an organized learning community during first academic term [*CCSSE* ppq4]

Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 31.1509 (df=4), *p* <.0001, N=1,734

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in an organized learning community during the first academic term	1	1.55	1.125	2.126	0.0073
Enrollment status	1	1.58	1.214	2.065	0.0007
Traditional age	1	0.91	0.709	1.159	0.4319
Generation status	1	0.68	0.542	0.850	0.0007

Interpretation: *CCSSE* developmental students who reported that they participated in an organized learning community during their first academic term were 1.55 times more likely to pass a gatekeeper English class than were students who reported they did not participate in an organized learning community during their first academic term, controlling for all other variables in the model.

Practice: Enroll in a student success course during first academic term [*CCSSE* ppq5]
Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 9.0416 (df=4), *p* = 0.0601, N=1,737

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enroll in a student success course during the first academic term	1	0.73	0.577	0.934	0.0120
Enrollment status	1	1.15	0.912	1.441	0.2431
Traditional age	1	1.17	0.940	1.455	0.1597
Generation status	1	1.05	0.856	1.296	0.6218

Interpretation: *CCSSE* developmental students who reported that they enrolled in a student success course during their first academic term were 0.73 times as likely to pass a gatekeeper math class as students who reported they did not enroll in a student success course during their first academic term, controlling for all other variables in the model.

Practice: Enroll in a student success course during first academic term [*CCSSE* ppq5]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 136.1053 (df=4), *p* = <.0001, N=1,737

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enroll in a student success course during the first academic term	1	3.73	2.938	4.742	<.0001
Enrollment status	1	1.50	1.137	1.964	0.0039
Traditional age	1	0.85	0.657	1.092	0.2000
Generation status	1	0.69	0.546	0.870	0.0017

Interpretation: *CCSSE* developmental students who reported that they enrolled in a student success course during their first academic term were 3.73 times more likely to pass a gatekeeper English class than were students who reported they did not enroll in a student success course during their first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during first academic term [*CCSSE* ppq3 & ppq5]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 126.4528 (df=4), *p* <.0001, N=1,750

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience **or** student success course during the first academic term	1	3.33	2.648	4.183	<.0001
Enrollment status	1	1.50	1.144	1.970	0.0034
Traditional age	1	0.92	0.714	1.182	0.5090
Generation status	1	0.71	0.561	0.890	0.0032

Interpretation: *CCSSE* developmental students who reported that they participated in a first-year experience **or** student success course during their first academic term were 3.33 times more likely to pass a gatekeeper English class than were students who reported that they did not participate in either a first-year experience or student success course during their first academic term, controlling for all other variables in the model.

Practice: Participate in accelerated or fast-track developmental education during the first academic term [*CCSSE* ppq6]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square   39.1605 (df=4), *p* <.0001, N= 1,219

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in accelerated/ fast-track developmental education during the first academic	1	2.19	1.574	3.048	<.0001
Enrollment status	1	1.46	1.043	2.054	0.0277
Traditional age	1	0.85	0.628	1.149	0.2900
Generation status	1	0.67	0.508	0.875	0.0034

Interpretation: *CCSSE* developmental students who reported participating in accelerated or fast-track developmental education during their first academic term were 2.19 times more likely to pass a gatekeeper English class than were students who reported they did not participate in accelerated or fast-track developmental education during their first academic term, controlling for all other variables in the model.

Practice: Require a placement test before a student can register for first academic term [*CCSSE* ppq8]
Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 9.9598 (df=4), *p* = 0.0411, N=1,214

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Students were required to take a placement test and the student took the test before registering for their first academic term	1	1.44	1.048	1.989	0.0247
Enrollment status	1	1.28	0.956	1.720	0.0976
Traditional age	1	0.95	0.725	1.244	0.7073
Generation status	1	1.21	0.944	1.555	0.1308

Interpretation: *CCSSE* developmental students who reported they were required to take a placement test and that they took the test before registering for their first academic term were 1.44 times more likely to pass a gatekeeper math class than were students who reported they were required to take a placement test but did not take the test, or reported a placement test was not required, controlling for all other variables in the model.

Practice: Placement test results indicate need for developmental education in one or more academic skills area [*CCSSE* ppq13]

Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 13.5057 (df=4), *p* = 0.0091, N=1,016

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Tested into developmental education in one or more academic skills area	1	2.15	1.273	3.635	0.0042
Enrollment status	1	1.33	0.965	1.842	0.0813
Traditional age	1	0.95	0.707	1.263	0.7034
Generation status	1	1.25	0.952	1.637	0.1080

Interpretation: *CCSSE* developmental students who reported that their placement test results indicated the need for developmental education in one or more academic skills areas were 2.15 times more likely to pass a gatekeeper math class than students who reported that their placement test results indicated no need for developmental education, controlling for all other variables in the model.

Practice: Placement test results indicate need for developmental education in one or more academic skills area [*CCSSE* ppq13]

Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 25.5000 (df=4), *p* <.0001, N=1,016

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Tested into developmental education in one or more academic skills area	1	3.95	1.878	8.287	0.0003
Enrollment status	1	1.44	1.002	2.060	0.0487
Traditional age	1	0.82	0.597	1.126	0.2201
Generation status	1	0.69	0.515	0.921	0.0119

Interpretation: *CCSSE* developmental students who reported that their placement test results indicated the need for developmental education in one or more academic skills areas were 3.95 times more likely to pass a gatekeeper English class than students who reported that their placement test results indicated no need for developmental education, controlling for all other variables in the model.

Practice: Placement test scores indicated the need for developmental education in at least one academic skills area [*CCSSE* ppq14]
Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 13.2723 (df=4), *p* = 0.0100, N= 953

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student told they are required to take one or more developmental education courses during their first academic term	1	0.66	0.494	0.890	0.0062
Enrollment Status	1	1.32	0.951	1.837	0.0970
Traditional Age	1	1.01	0.753	1.354	0.9480
Generation Status	1	1.29	0.977	1.691	0.0726

Interpretation: *CCSSE* developmental students who reported being required to take at least one developmental education course during their first academic term based on placement test results were 0.66 times as likely to pass a gatekeeper math class as students who reported they were told they should take at least one developmental education course during their first academic term, but it was not required, controlling for all other variables in the model.

Practice: Placement test scores indicated the need for developmental education in at least one academic skills area [*CCSSE* ppq14]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 47.1847(df=4), *p* = <.0001, N= 953

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student told they are required to take one or more developmental education courses during their first academic term	1	3.47	2.316	5.196	<.0001
Enrollment Status	1	1.38	0.953	1.998	0.0881
Traditional Age	1	0.88	0.635	1.215	0.4340
Generation Status	1	0.68	0.504	0.912	0.0101

Interpretation: *CCSSE* developmental students who reported being required to take at least one developmental education course during their first academic term based on placement test results were 3.47 times more likely to pass a gatekeeper English class than were students who reported they were told they should take at least one developmental education course during their first academic term, but it was not required, controlling for all other variables in the model.

Practice: Required to take at least one developmental course during their first term [*CCSSE* ppq15]

Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 23.6833 (df=4), *p* = <.0001, N= 908

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student enrolled in one or more required developmental education course during their first academic term	1	3.42	1.674	6.968	0.0007
Enrollment Status	1	1.55	1.069	2.249	0.0207
Traditional Age	1	0.86	0.619	1.188	0.3553
Generation Status	1	0.71	0.534	0.951	0.0215

Interpretation: *CCSSE* developmental students who reported that they were told they were required to take a developmental education course during their first term and they enrolled in one or more of these required courses during their first academic term were 3.42 times more likely to pass a gatekeeper English class than were students who reported they did not enroll in a required developmental education course during their first academic term, controlling for all other variables in the model.

Practice: Before the end of the first academic term, an advisor helped develop an academic plan [*CCSSE* ppq16]

Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 12.6659 (df=4), *p* = 0.0130, N=1,204

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
An advisor helped to develop an academic plan before the end of the first academic term	1	1.45	1.135	1.855	0.0029
Enrollment status	1	1.26	0.933	1.688	0.1340
Traditional age	1	1.00	0.765	1.314	0.9851
Generation status	1	1.18	0.917	1.515	0.1986

Interpretation: *CCSSE* developmental students who reported that an advisor helped them develop an academic plan before the end of first academic term were 1.45 times more likely to pass a gatekeeper math class than were students who reported they did not receive such assistance during their first academic term, controlling for all other variables in the model

Practice: Before the end of the first academic term, an advisor helped develop an academic plan [*CCSSE* ppq16]

Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 25.3885 (df=4), *p* <.0001, N=1,204

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
An advisor helped to develop an academic plan before the end of the first academic term	1	1.47	1.123	1.929	0.0051
Enrollment status	1	1.49	1.063	2.100	0.0208
Traditional age	1	0.79	0.582	1.068	0.1245
Generation status	1	0.64	0.490	0.845	0.0015

Interpretation: *CCSSE* developmental students who reported that an advisor helped them develop an academic plan before the end of first academic term were 1.47 times more likely to pass a gatekeeper English class than were students who reported they did not receive such assistance during their first academic term, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq11 & ppq12, combined]

Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 9.7161 (df=4), *p* = 0.0455, N= 1,087

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a brief (8 hour), intensive brush-up workshop and found it helpful	1	0.52	0.301	0.883	0.0157
Enrollment status	1	1.36	0.992	1.864	0.0560
Traditional age	1	1.08	0.814	1.433	0.5952
Generation status	1	1.11	0.853	1.441	0.4425

Interpretation: *CCSSE* developmental students who reported participating in a brief, intensive brush-up workshop and finding it helpful were 0.52 times as likely to pass a gatekeeper math class as were students who did not report using any form of the college's test preparation options, or who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 28.5058 (df=4), *p* <.0001, N=1,079

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a multi-day or multi-week brush-up program and found it helpful	1	2.08	1.254	3.437	0.0045
Enrollment status	1	1.69	1.168	2.443	0.0054
Traditional age	1	0.81	0.589	1.113	0.1935
Generation status	1	0.66	0.498	0.880	0.0044

Interpretation: *CCSSE* developmental students who reported participating in a multi-day or multi-week brush-up program and found it helpful were 2.08 times more likely to pass a gatekeeper English class than were students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Participate in an internship, field experience, co-op experience, or clinical assignment [*CCSSE* main q8a]
Results for *CCSSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 8.2609 (df=4), *p* = 0.0825, N=1,916

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in an internship, field experience, co-op experience, or clinical assignment	1	1.32	0.990	1.766	0.0582
Enrollment status	1	1.13	0.906	1.397	0.2858
Traditional age	1	1.22	0.994	1.504	0.0571
Generation status	1	1.06	0.868	1.288	0.5778

Interpretation: *CCSSE* developmental students who reported they participated in an internship, field experience, or coop experience were 1.32 times more likely to pass a gatekeeper math class than were students who reported they either planned to participate or that they have not participated nor planned to participate in an internship, field experience, or coop experience, controlling for all other variables in the model.

Practice: Participate in an internship, field experience, co-op experience, or clinical assignment [*CCSSE* main q8a]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square   25.5114 (df=4), *p* <.0001, N=1,916

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in an internship, field experience, co-op experience, or clinical assignment	1	0.74	0.520	1.055	0.0958
Enrollment status	1	1.49	1.164	1.915	0.0016
Traditional age	1	0.87	0.689	1.097	0.2371
Generation status	1	0.71	0.571	0.874	0.0014

Interpretation: *CCSSE* developmental students who reported they participated in an internship, field experience, or coop experience were 0.74 times as likely to pass a gatekeeper English class as students who reported they either planned to participate or that they have not participated nor planned to participate in an internship, field experience, or coop experience, controlling for all other variables in the model.

Practice: Participate in a study skills course [*CCSSE* main q8f]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 115.8691 (df=4), *p* <.0001, N=1,925

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a study skills course	1	3.04	2.431	3.796	<.0001
Enrollment status	1	1.43	1.111	1.848	0.0056
Traditional age	1	0.81	0.638	1.027	0.0820
Generation status	1	0.69	0.550	0.852	0.0007

Interpretation: *CCSSE* developmental students who reported they participated in a study skills course were 3.04 times more likely to pass a gatekeeper English class than were students who reported they either planned to participate or that they have not participated nor planned to participate in a study skills course, controlling for all other variables in the model.

Practice: Participate in an orientation program or course [*CCSSE* main q8h]
Results for *CCSSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 26.2642 (df=4), *p* <.0001, N=1,910

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in an orientation program or course	1	1.24	1.004	1.531	0.0454
Enrollment status	1	1.46	1.140	1.877	0.0028
Traditional age	1	0.84	0.663	1.056	0.1341
Generation status	1	0.70	0.562	0.863	0.0009

Interpretation: *CCSSE* developmental students who reported they participated in an orientation program or course were 1.24 times more likely to pass a gatekeeper English class than were students who reported they either planned to participate or that they have not participated nor planned to participate in an orientation program, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [SENSE ppq2]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 12.8158 (df=4), *p* = 0.0122, N= 847

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience during the first academic term	1	1.52	1.072	2.158	0.0188
Enrollment Status	1	1.58	1.069	2.333	0.0216
Traditional Age	1	0.81	0.538	1.204	0.2901
Generation Status	1	0.92	0.651	1.311	0.6583

Interpretation: *SENSE* developmental students who reported they were participating in a first-year experience during their first academic term were 1.52 times more likely to pass a gatekeeper English class than were students who reported they were not participating in a first-year experience, controlling for all other variables in the model.

Practice: Academic early warning [SENSE ppq12]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 20.2523 (df=4), *p* =0.0004, N=553

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Someone at the college contacts student if they are struggling with studies	1	0.44	0.265	0.735	0.0017
Enrollment status	1	2.23	1.366	3.636	0.0013
Traditional age	1	0.81	0.497	1.314	0.3905
Generation status	1	1.13	0.739	1.719	0.5772

Interpretation: *SENSE* developmental students who reported that someone at the college contacted them if they were struggling academically to help them get the assistance they need were 0.44 times as likely to pass a gatekeeper English class as students who reported that someone did not contact them when they were struggling, controlling for all other variables in the model.

Practice: Add or drop any classes within the first three weeks of the first academic term
[SENSE main q8]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 14.9710 (df=4), *p* = 0.0048, N= 2545

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Added/dropped at least one class with or without discussing the decision with a staff member/instructor	1	0.56	0.307	1.018	0.0573
Enrollment Status	1	1.78	1.240	2.541	0.0017
Traditional Age	1	0.91	0.626	1.329	0.6329
Generation Status	1	1.09	0.815	1.460	0.5606

Interpretation: *SENSE* developmental students who reported they added or dropped at least one class during the first three weeks of their first term with or without discussing the decision with a staff member or instructor were 0.56 times as likely to pass a gatekeeper math class as students who reported they did not add or drop any classes during the first three weeks of their first academic term, controlling for all other variables in the model.

Practice: Add or drop any classes within the first three weeks of the first academic term
[SENSE main q8]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 11.9025 (df=4), *p* = 0.0181, N= 2,545

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Added/dropped at least one class with or without discussing the decision with a staff member/instructor	1	0.53	0.348	0.819	0.0041
Enrollment Status	1	1.00	0.792	1.260	0.9956
Traditional Age	1	0.78	0.592	1.030	0.0795
Generation Status	1	0.92	0.741	1.133	0.4176

Interpretation: *SENSE* developmental students who reported they added or dropped at least one class during the first three weeks of their first term with or without discussing the decision with a staff member or instructor were 0.53 times as likely to pass a gatekeeper English class as students who reported they did not add or drop any classes during the first three weeks of their first academic term, controlling for all other variables in the model.

Practice: Dropping courses after the first day of class during the first academic term [SENSE main q9]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 15.6010 (df=4), *p* =0.0036, N= 2,537

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Dropped one or more courses after the first day of class	1	0.40	0.163	0.995	0.0488
Enrollment Status	1	1.81	1.259	2.598	0.0014
Traditional Age	1	0.92	0.629	1.336	0.6509
Generation Status	1	1.10	0.820	1.474	0.5256

Interpretation: *SENSE* developmental students who reported that they dropped one or more courses after the first class session during their first academic term were 0.40 times as likely to pass a gatekeeper math class as students who reported that they dropped no courses after the first class session during their first academic term, controlling for all other variables in the model.

Practice: Dropping courses after the first day of class during the first academic term [SENSE main q9]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 12.5963 (df=4), *p* = 0.0134, N= 2,537

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Dropped one or more courses after the first day of class during the first academic term	1	0.40	0.215	0.749	0.0041
Enrollment Status	1	0.99	0.781	1.243	0.9021
Traditional Age	1	0.75	0.571	0.996	0.0471
Generation Status	1	0.91	0.733	1.121	0.3643

Interpretation: *SENSE* developmental students who reported that they dropped one or more courses after the first class session during their first academic term were 0.40 times as likely to pass a gatekeeper English class than were students who reported that they dropped no courses after the first class session during their first academic term, controlling for all other variables in the model.

Practice: Require a placement test to assess skills in reading, writing, and/or math before allowing registration for classes. [SENSE main q12a]

Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 11.5812 (df=4), *p* = 0.0208, N= 2,527

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Before registering for classes, student is required to take a placement test to assess academic skills	1	1.93	1.223	3.031	0.0047
Enrollment status	1	0.99	0.788	1.253	0.9565
Traditional age	1	0.76	0.576	1.005	0.0541
Generation status	1	0.92	0.741	1.135	0.4280

Interpretation: *SENSE* developmental students who reported they were required to take a placement test to assess skills in reading, writing, and/or math before they could registering for classes were 1.93 times more likely to pass a gatekeeper English class than were students who reported they were not required to take a placement test prior to registering for classes, controlling for all other variables in the model.

Practice: Require enrollment in classes indicated by placement test scores during the first academic term [SENSE main q14]

Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 13.8324 (df=4), *p* = 0.0078, N= 2,510

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Require students to enroll in classes indicated by placement test scores during the first academic term	1	0.70	0.462	1.062	0.0937
Enrollment status	1	1.78	1.244	2.549	0.0016
Traditional age	1	0.91	0.622	1.322	0.6113
Generation status	1	1.07	0.801	1.436	0.6381

Interpretation: *SENSE* developmental students who reported they were required to enroll in classes indicated by their placement test scores during their first academic term were 0.70 times as likely to pass a gatekeeper math class as were students who reported they were not required to enroll in classes indicated by placement test scores during their first academic term, controlling for all other variables in the model.

Practice: Require enrollment in classes indicated by placement test scores during the first academic term [SENSE main q14]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 26.9288 (df=4), *p* < 0.0001, N= 2,510

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Require students to enroll in classes indicated by placement test scores during the first academic term	1	3.71	2.181	6.322	<.0001
Enrollment status	1	1.00	0.788	1.258	0.9720
Traditional age	1	0.77	0.584	1.020	0.0682
Generation status	1	0.92	0.740	1.135	0.4250

Interpretation: *SENSE* developmental students who reported they were required to enroll in classes indicated by their placement test scores during their first academic term were 3.71 times more likely to pass a gatekeeper English class as were students who reported they were not required to enroll in classes indicated by placement test scores during their first academic term, controlling for all other variables in the model.

Practice: Advisor helps student set academic goals and create a plan for achieving them [SENSE main q18f]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 17.2904 (df=4), *p* = 0.0017, N= 2,527

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Advisor helps student set academic goals and create a plan for achieving them	1	0.69	0.519	0.928	0.0139
Enrollment status	1	1.83	1.276	2.616	0.0010
Traditional age	1	0.92	0.630	1.339	0.6579
Generation status	1	1.07	0.798	1.429	0.6568

Interpretation: *SENSE* developmental students who agreed or strongly agreed that an advisor helped them set academic goals and create a plan to achieve them were 0.69 times as likely to pass a gatekeeper math class as students who responded "neutral", "disagree", or "strongly disagree" that an advisor set academic goals and create a plan to achieve them, controlling for all other variables in the model.

Practice: Work with classmates outside of class on class projects or assignments [SENSE main q19h]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square 14.9577 (df=4), *p* = 0.0048, N= 2,534

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Work with classmates outside of class on class projects or assignments at least once	1	1.32	0.985	1.757	0.0635
Enrollment status	1	1.73	1.205	2.478	0.0029
Traditional age	1	0.92	0.628	1.335	0.6476
Generation status	1	1.08	0.809	1.448	0.5954

Interpretation: *SENSE* developmental students who reported working with classmates outside of class on class projects or assignments at least once during the first three weeks of their first academic term were 1.32 times more likely to a gatekeeper math class than were students who reported that they never worked with classmates outside of class on class projects or assignments during their first three weeks, controlling for all other variables in the model.

Practice: Work with classmates outside of class on class projects or assignments [SENSE main q19h]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 9.8498(df=4), *p* = 0.0430, N= 2,534

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Work with classmates outside of class on class projects or assignments at least once	1	1.31	1.053	1.618	0.0150
Enrollment status	1	0.99	0.780	1.247	0.9082
Traditional age	1	0.78	0.592	1.032	0.0827
Generation status	1	0.92	0.742	1.135	0.4267

Interpretation: *SENSE* developmental students who reported working with classmates outside of class on class projects or assignments at least once during the first three weeks of their first academic term were 1.31 times more likely to a gatekeeper English class than were students who reported that they never worked with classmates outside of class on class projects or assignments during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a student-initiated (not required) study group outside of class [SENSE main q19j]

Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square   15.9625 (df=4), *p* = 0.0031, N= 2,522

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a student-initiated study group outside of class at least once	1	1.42	1.025	1.979	0.0349
Enrollment status	1	1.75	1.225	2.511	0.0022
Traditional age	1	0.90	0.620	1.318	0.6000
Generation status	1	1.07	0.800	1.433	0.6459

Interpretation: *SENSE* developmental students who report that they participated in a student-initiated (not required) study group outside of class at least once during the first three weeks of their first academic term were 1.42 times more likely to pass a gatekeeper math class than were students who reported that they never participated in a student-initiated study group outside of class during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a student-initiated (not required) study group outside of class [SENSE main q19j]

Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square   8.7702 (df=4), *p* = 0.0671, N= 2,522

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a student-initiated study group outside of class at least once	1	1.33	1.035	1.709	0.0259
Enrollment status	1	1.00	0.790	1.261	0.9875
Traditional age	1	0.79	0.596	1.037	0.0889
Generation status	1	0.90	0.726	1.112	0.3256

Interpretation: *SENSE* developmental students who report that they participated in a student-initiated (not required) study group outside of class at least once during the first three weeks of their first academic term were 1.33 times more likely to pass a gatekeeper English class than were students who reported that they never participated in a student-initiated study group outside of class during their first three weeks, controlling for all other variables in the model.

Practice: Use online tutoring [SENSE main q20e]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square   15.5956 (df=4), *p* = 0.0036, N= 2,401

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used online tutoring at least once before the end of the first three weeks of the first academic term	1	0.54	0.282	1.045	0.0674
Enrollment status	1	1.91	1.306	2.795	0.0008
Traditional age	1	0.90	0.603	1.332	0.5878
Generation status	1	1.05	0.778	1.426	0.7349

Interpretation: *SENSE* developmental students who reported that they used online tutoring at least once during the first three weeks of their first academic term were 0.54 times as likely to pass a gatekeeper math class as students who reported that they never used online tutoring during their first three weeks, controlling for all other variables in the model.

Practice: Use writing, math, or other skill lab [SENSE main q20f]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square   27.6356 (df=4), *p* <.0001, N= 2,452

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used writing, math, or other skill lab at least once before the end of the first three weeks of the first academic term	1	0.55	0.406	0.739	<.0001
Enrollment status	1	1.98	1.367	2.879	0.0003
Traditional age	1	0.91	0.617	1.339	0.6309
Generation status	1	1.01	0.750	1.364	0.9409

Interpretation: *SENSE* developmental students who reported that they used a writing, math, or other skill lab at least once during the first three weeks of their first academic term were 0.55 times as likely to pass a gatekeeper math class as students who reported that they never used a writing, math, or other skill lab during their first three weeks, controlling for all other variables in the model.

Practice: Use writing, math, or other skill lab [SENSE main q20f]
Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square   13.4298 (df=4), *p* = 0.0094, N= 2,452

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used writing, math, or other skill lab at least once before the end of the first three weeks of the first academic term	1	1.44	1.159	1.793	0.0010
Enrollment status	1	1.00	0.784	1.262	0.9655
Traditional age	1	0.79	0.597	1.045	0.0981
Generation status	1	0.96	0.773	1.193	0.7120

Interpretation: *SENSE* developmental students who reported that they used a writing, math, or other skill lab at least once during the first three weeks of their first academic term were 1.44 times as likely to pass a gatekeeper English class as students who reported that they never used a writing, math, or other skill lab during their first three weeks, controlling for all other variables in the model.

Practice: Learned to improve study skills within a class or through another experience [SENSE q21a]
Results for *SENSE* respondents – Passing gatekeeper math

Overall Model: Wald Chi-Square   15.1906 (df=4), *p* 0.0043, N= 2,544

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned to improve study skills	1	0.73	0.522	1.013	0.0600
Enrollment status	1	1.80	1.260	2.581	0.0013
Traditional age	1	0.90	0.620	1.316	0.5969
Generation status	1	1.06	0.792	1.417	0.6969

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that, within a class or through another experience at their college, they learning to improve their study skills were 0.73 times as likely to pass a gatekeeper math class as were students who responded "neutral", "disagree", or "strongly disagree" that they learned to improve their study skills, controlling for all other variables in the model.

Practice: Learned to improve study skills within a class or through another experience [SENSE q21a]

Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 9.8704 (df=4), *p* =0.0427, N= 2,544

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned to improve study skills	1	1.43	1.076	1.896	0.0136
Enrollment status	1	1.01	0.800	1.272	0.9399
Traditional age	1	0.77	0.581	1.009	0.0583
Generation status	1	0.92	0.744	1.137	0.4383

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that, within a class or through another experience at their college, they learning to improve their study skills were 1.43 times more likely to pass a gatekeeper English class than were students who responded "neutral", "disagree", or "strongly disagree" that they learned to improve their study skills, controlling for all other variables in the model.

Practice: Learned to understand academic strengths and weaknesses within a class or through another experience [SENSE main q21b]

Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square 13.9090 (df=4), *p*= 0.0076, N= 2,543

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned to understand their academic strengths and weaknesses	1	1.55	1.183	2.019	0.0014
Enrollment status	1	1.00	0.797	1.266	0.9704
Traditional age	1	0.78	0.591	1.028	0.0782
Generation status	1	0.92	0.744	1.138	0.4420

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that, within a class or through another experience at their college, they learned to understand their academic strengths and weaknesses were 1.55 times more likely to pass a gatekeeper English class than were students who responded "neutral", "disagree", or "strongly disagree" that they learned to understand their academic strengths and weaknesses, controlling for all other variables in the model.

Practice: Enrolled in a student success course during the first academic term [SENSE main 17e]

Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square   53.7578 (df=4), *p* <.0001, N= 2,458

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enrolled in a course specifically designed to teach skills & strategies to help students succeed (student success course)	1	2.21	1.775	2.740	<.0001
Enrollment status	1	0.98	0.769	1.241	0.8509
Traditional age	1	0.78	0.585	1.033	0.0825
Generation status	1	0.93	0.743	1.151	0.4844

Interpretation: *SENSE* developmental students who reported that they enrolled in a course specifically designed to teach skills and strategies to help students succeed in college (student success course) were 2.21 times more likely to pass a gatekeeper English class than were students who reported that they did not participate in a student success course, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during their first academic term [SENSE ppq2 & main q17e]

Results for *SENSE* respondents – Passing gatekeeper English

Overall Model: Wald Chi-Square   32.5720 (df=4), *p* <.0001, N= 1,483

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience **or** student success course during the first academic term	1	2.91	1.959	4.321	<.0001
Enrollment status	1	1.08	0.810	1.442	0.5979
Traditional age	1	0.76	0.540	1.056	0.1007
Generation status	1	0.90	0.692	1.174	0.4405

Interpretation: *SENSE* developmental students who reported that they were participating in a first-year experience **or** student success course during their first academic term were 2.91 times more likely to pass a gatekeeper English class than were students who reported that they were not participating in either a first-year experience **or** student success course during their first academic term, controlling for all other variables in the model.

Outcome 3: Persistence (Part 1 of 2 – Fall-to-Fall)

NOTE: Analyses in this section include both developmental and non-developmental students. Analyses were run separately for developmental and non-developmental students and the results are labeled appropriately.

Practice: Require enrollment in classes indicated by placement test results during the first academic term [SENSE main q14]
Results for *SENSE* respondents – developmental students

Overall Model: Wald Chi-Square   555.8289 (df=9), *p* <.0001, N= 4,791 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Required to enroll in classes during the first academic term as indicated by placement test scores	1	1.51	0.975	2.335	0.0647
Enrollment status	1	0.68	0.527	0.879	0.0031
Traditional age	1	1.00	0.983	1.015	0.8964
Generation status	1	1.06	0.816	1.366	0.6777
Count of terms enrolled	1	46.51	33.275	64.997	<.0001
Count of developmental education courses attempted	1	1.17	1.077	1.273	0.0002
Ratio: Number developmental education courses attempted to courses completed	1	0.59	0.404	0.874	0.0082
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.88	0.237	3.288	0.8524
Ratio: Number courses completed with C or better to number attempted	1	0.57	0.283	1.137	0.1102

Interpretation: *SENSE* developmental students who reported that they were required to enroll in developmental education based on their placement test results were 1.51 times more likely to persist fall to fall than were students who they were not required to enroll in courses indicated by their placement test scores, controlling for all other variables in the model.

Practice: Registration before classes begin [SENSE ppq1]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   133.5842 (df=9), *p* <.0001, N= 830 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Registered for all classes before the first class session	1	11.29	2.528	50.434	0.0015
Enrollment status	1	0.50	0.290	0.862	0.0127
Traditional age	1	1.06	0.999	1.122	0.0551
Generation status	1	1.35	0.773	2.373	0.2895
Count of terms enrolled	1	25.05	14.387	43.612	<.0001
Count of developmental education courses attempted	1	1.04	0.663	1.619	0.8769
Ratio: Number developmental education courses attempted to courses completed	1	0.21	0.022	2.022	0.1776
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.35	0.017	7.185	0.4924
Ratio: Number courses completed with C or better to number attempted	1	0.48	0.081	2.894	0.4266

Interpretation: *SENSE* non-developmental students who reported that they registered for all classes before the first class session were 11.29 times more likely to persist fall to fall than were students who did not report registering for all courses before the first class session, controlling for all other variables in the model.

Practice: Participate in accelerated or fast-track developmental education [SENSE ppq3]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   183.6291 (df=9), *p* <.0001, N= 1,593 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more accelerated/fast-track programs to help student move through developmental education requirements more quickly	1	0.53	0.335	0.852	0.0084
Enrollment status	1	0.45	0.273	0.729	0.0013
Traditional age	1	1.02	0.990	1.043	0.2240
Generation status	1	1.19	0.762	1.863	0.4425
Count of terms enrolled	1	58.99	31.935	108.960	<.0001
Count of developmental education courses attempted	1	1.06	0.912	1.226	0.4615
Ratio: Number developmental education courses attempted to courses completed	1	0.81	0.423	1.539	0.5138
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.50	0.057	4.367	0.5301
Ratio: Number courses completed with C or better to number attempted	1	0.43	0.115	1.582	0.2026

Interpretation: *SENSE* developmental students who reported that they were participating in one or more accelerated or fast-track programs to help them move through developmental education more quickly were 0.53 times as likely to persist from fall to fall as those students who reported that they were not participating in accelerated or fast-track developmental education, controlling for all other variables in the model.

Practice: Students prepare for the placement test [SENSE ppq7 & ppq8, combined]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square 173.9921 (df=9), *p* <.0001, N= 1,415 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a multi-day or multi-week brush-up program and found it helpful	1	0.54	0.286	1.019	0.0570
Enrollment status	1	0.44	0.267	0.721	0.0011
Traditional age	1	1.02	0.991	1.044	0.2058
Generation status	1	1.20	0.764	1.881	0.4306
Count of terms enrolled	1	64.47	33.883	122.685	<.0001
Count of developmental education courses attempted	1	1.08	0.927	1.251	0.3349
Ratio: Number developmental education courses attempted to courses completed	1	0.81	0.423	1.562	0.5338
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.87	0.097	7.869	0.9025
Ratio: Number courses completed with C or better to number attempted	1	0.45	0.121	1.678	0.2345

Interpretation: *SENSE* developmental students who reported that they participated in a multi-day or multi-week brush-up program and finding it helpful were 0.54 times as likely to persist from fall to fall as were students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Registering for all courses more than one week before the first class session [SENSE main q10]

Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   557.1980 (df=9), *p* <.0001, N= 4,843 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Register for all classes more than one week before the first class session	1	1.63	1.058	2.522	0.0269
Enrollment status	1	0.69	0.533	0.887	0.0039
Traditional age	1	1.00	0.983	1.015	0.9141
Generation status	1	1.07	0.829	1.385	0.5979
Count of terms enrolled	1	46.29	33.139	64.657	<.0001
Count of developmental education courses attempted	1	1.19	1.098	1.290	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.57	0.387	0.835	0.0040
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.74	0.201	2.719	0.6499
Ratio: Number courses completed with C or better to number attempted	1	0.49	0.244	0.974	0.0420

Interpretation: *SENSE* developmental students who report that they registered for all courses more than one week before the first class session were 1.63 times more likely to persist from fall to fall than were students who did not report registering for all courses more than one week before the first class session, controlling for all other variables in the model.

Practice: Enroll in an organized learning community during the first academic term [SENSE main q17f]

Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   525.6991 (df=9), *p* <.0001, N= 4,624 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enrolled in an organized learning community during the first academic term	1	0.52	0.314	0.868	0.0123
Enrollment status	1	0.69	0.531	0.894	0.0051
Traditional age	1	1.00	0.982	1.015	0.8065
Generation status	1	1.01	0.780	1.320	0.9156
Count of terms enrolled	1	47.39	33.493	67.056	<.0001
Count of developmental education courses attempted	1	1.21	1.112	1.314	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.60	0.402	0.879	0.0091
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.57	0.149	2.188	0.4143
Ratio: Number courses completed with C or better to number attempted	1	0.55	0.271	1.114	0.0968

Interpretation: *SENSE* developmental students who reported that they enrolled in an organized learning community during their first academic term were 0.52 times as likely to persist from fall to fall as were students who reported they did not enroll in an organized learning community during their first academic term, controlling for all other variables in the model.

Practice: Staff member talks with students about commitments outside of school work [SENSE main q18h]

Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   556.6795 (df=9), *p* <.0001, N= 4,831 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
A college staff member talks with students about their commitments outside of school work	1	0.78	0.591	1.024	0.0734
Enrollment status	1	0.68	0.529	0.879	0.0031
Traditional age	1	1.00	0.984	1.016	0.9575
Generation status	1	1.09	0.843	1.407	0.5163
Count of terms enrolled	1	46.00	32.952	64.205	<.0001
Count of developmental education courses attempted	1	1.19	1.100	1.292	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.57	0.391	0.840	0.0043
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.72	0.196	2.626	0.6157
Ratio: Number courses completed with C or better to number attempted	1	0.53	0.268	1.056	0.0713

Interpretation: *SENSE* developmental students who agreed or strongly agreed that a college staff member talked with them about commitments outside of school to help them figure out how many courses to take were 0.78 times as likely to persist from fall to fall as were students who responded "neutral", "disagree", or "strongly disagree" that a college staff member talked with them about commitments outside of school, controlling for all other variables in the model.

Practice: Participate in supplemental instruction [SENSE main q19e]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   327.0585 (df=9), *p* <.0001, N= 2,089

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in supplemental instruction during the first academic term at least once	1	0.64	0.414	0.977	0.0388
Enrollment status	1	0.49	0.347	0.703	<.0001
Traditional age	1	1.00	0.968	1.036	0.9287
Generation status	1	1.20	0.836	1.718	0.3241
Count of terms enrolled	1	25.14	17.623	35.855	<.0001
Count of developmental education courses attempted	1	1.50	1.195	1.870	0.0004
Ratio: Number developmental education courses attempted to courses completed	1	0.14	0.042	0.453	0.0011
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.12	0.014	0.959	0.0456
Ratio: Number courses completed with C or better to number attempted	1	0.50	0.180	1.391	0.1846

Interpretation: *SENSE* non-developmental students who reported that they participated in supplemental instruction at least once during the first three weeks of their first academic term were 0.64 times as likely to persist from fall to fall as were students who reported that they never participated in supplemental instruction during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a required study group outside of class [SENSE main q19i]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   325.6754(df=9), *p* <.0001, N= 2,088 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a required study group outside of class at least once	1	0.58	0.326	1.043	0.0692
Enrollment status	1	0.47	0.332	0.673	<.0001
Traditional age	1	1.00	0.961	1.031	0.7978
Generation status	1	1.19	0.828	1.702	0.3506
Count of terms enrolled	1	25.47	17.821	36.392	<.0001
Count of developmental education courses attempted	1	1.44	1.158	1.786	0.0010
Ratio: Number developmental education courses attempted to courses completed	1	0.15	0.048	0.490	0.0016
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.12	0.014	0.928	0.0423
Ratio: Number courses completed with C or better to number attempted	1	0.48	0.174	1.332	0.1589

Interpretation: *SENSE* non-developmental students who reported that they participated in a required study group outside of class at least once during the first three weeks of their first academic term were 0.58 times as likely to persist from fall to fall as were students who reported that they never participated in a required study group outside of class during their first three weeks, controlling for all other variables in the model.

Practice: Use academic advising/planning services [SENSE main q20a]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   541.3420 (df=9), *p* <.0001, N= 4,688 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Used academic advising/ planning services at least once before the end of the first three weeks of the first academic term	1	0.79	0.601	1.027	0.0772
Enrollment status	1	0.69	0.533	0.892	0.0047
Traditional age	1	1.00	0.984	1.017	0.9776
Generation status	1	1.09	0.838	1.409	0.5309
Count of terms enrolled	1	46.39	33.071	65.058	<.0001
Count of developmental education courses attempted	1	1.18	1.085	1.277	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.61	0.414	0.908	0.0147
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.69	0.185	2.569	0.5803
Ratio: Number courses completed with C or better to number attempted	1	0.55	0.273	1.101	0.0909

Interpretation: *SENSE* developmental students who reported that they used academic advising/planning services at least once between the time they decided to attend the college and the end of the first three weeks of their first term were 0.79 times as likely to persist from fall to fall as were students who reported that they never used academic advising/planning services before the end of their first three weeks, controlling for all other variables in the model.

Practice: Attending any orientation [*CCSSE* ppq2]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   789.8531 (df=9), *p* <.0001, N= 3,302 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Attending any orientation	1	1.24	0.980	1.567	0.0733
Enrollment status	1	0.34	0.267	0.436	<.0001
Traditional age	1	0.97	0.950	0.986	0.0006
Generation status	1	0.79	0.611	1.030	0.0821
Count of terms enrolled	1	14.36	11.916	17.311	<.0001
Count of developmental education courses attempted	1	1.09	0.955	1.232	0.2088
Ratio: Number developmental education courses attempted to courses completed	1	0.89	0.463	1.691	0.7108
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.04	0.168	6.418	0.9679
Ratio: Number courses completed with C or better to number attempted	1	1.79	0.728	4.397	0.2047

Interpretation: *CCSSE* non-developmental students who attending an online or on-campus orientation or enrolled in an orientation course during their first term were 1.24 times more likely to persist from fall to fall than were those students who did not participate in any type of orientation, controlling for all other variables in the model.

Practice: Enroll in a student success course during first academic term [*CCSSE* ppq5]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   877.1481 (df=9), *p* <.0001, N= 3,804 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enroll in a student success course during the first academic term	1	0.66	0.502	0.875	0.0037
Enrollment status	1	0.50	0.396	0.621	<.0001
Traditional age	1	0.99	0.973	1.002	0.0907
Generation status	1	1.12	0.889	1.411	0.3361
Count of terms enrolled	1	16.32	13.486	19.760	<.0001
Count of developmental education courses attempted	1	1.24	1.145	1.344	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.54	0.355	0.830	0.0048
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.49	0.114	2.067	0.3285
Ratio: Number courses completed with C or better to number attempted	1	0.85	0.414	1.734	0.6506

Interpretation: *CCSSE* developmental students who reported that they enrolled in a student success course during their first academic term were 0.66 times as likely to persist from fall to fall as were students who reported they did not enroll in a student success course during their first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [*CCSSE* ppq3]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square 767.9191(df=9), *p* <.0001, N= 3,221 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a First-year experience during the first academic term	1	1.49	1.105	2.013	0.0089
Enrollment status	1	0.34	0.264	0.434	<.0001
Traditional age	1	0.97	0.951	0.989	0.0018
Generation status	1	0.78	0.600	1.023	0.0725
Count of terms enrolled	1	14.64	12.096	17.717	<.0001
Count of developmental education courses attempted	1	1.10	0.963	1.245	0.1675
Ratio: Number developmental education courses attempted to courses completed	1	0.86	0.443	1.651	0.6414
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.84	0.133	5.286	0.8505
Ratio: Number courses completed with C or better to number attempted	1	1.82	0.733	4.503	0.1969

Interpretation: *CCSSE* non-developmental students who reported participating in a first-year experience course during their first academic term were 1.49 times more likely to persist from fall to fall than were students who reported they did not participate in a first-year experience course during their first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during first academic term [*CCSSE* ppq3 & ppq5]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   771.8180 (df=9), *p* <.0001, N= 3,233 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience **or** student success course during the first academic term	1	1.33	1.015	1.743	0.0386
Enrollment status	1	0.34	0.263	0.432	<.0001
Traditional age	1	0.97	0.951	0.989	0.0017
Generation status	1	0.79	0.605	1.028	0.0792
Count of terms enrolled	1	14.61	12.083	17.676	<.0001
Count of developmental education courses attempted	1	1.09	0.961	1.244	0.1734
Ratio: Number developmental education courses attempted to courses completed	1	0.85	0.443	1.632	0.6253
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.83	0.132	5.223	0.8424
Ratio: Number courses completed with C or better to number attempted	1	1.82	0.735	4.497	0.1957

Interpretation: *CCSSE* non-developmental students who reported that they participated in a student success course or first-year experience during their first academic term were 1.33 times more likely to persist from fall to fall than were students who reported that they did not participate in a student success course or first-year experience during first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during first academic term [*CCSSE* ppq3 & ppq5]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   885.0037 (df=9), *p* <.0001, N= 3,835 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience **or** student success course during the first academic term	1	0.74	0.589	0.938	0.0125
Enrollment status	1	0.50	0.397	0.621	<.0001
Traditional age	1	0.99	0.973	1.001	0.0734
Generation status	1	1.12	0.891	1.412	0.3303
Count of terms enrolled	1	16.29	13.471	19.698	<.0001
Count of developmental education courses attempted	1	1.23	1.138	1.332	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.54	0.351	0.822	0.0042
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.44	0.105	1.872	0.2689
Ratio: Number courses completed with C or better to number attempted	1	0.78	0.385	1.597	0.5023

Interpretation: *CCSSE* developmental students who reported that they participated in a student success course or first-year experience during their first academic term were 0.74 times as likely to persist from fall to fall as students who reported that they did not participate in a student success course or first-year experience during first academic term, controlling for all other variables in the model.

Practice: Participate in accelerated or fast-track developmental education during the first academic term [*CCSSE* ppq6]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   514.7947 (df=9), *p* <.0001, N= 2,147 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in accelerated/ fast-track developmental education during the first academic	1	0.45	0.257	0.770	0.0038
Enrollment status	1	0.23	0.166	0.319	<.0001
Traditional age	1	0.97	0.951	0.994	0.0131
Generation status	1	0.82	0.598	1.133	0.2329
Count of terms enrolled	1	15.02	11.867	19.019	<.0001
Count of developmental education courses attempted	1	1.16	0.974	1.384	0.0951
Ratio: Number developmental education courses attempted to courses completed	1	0.82	0.294	2.261	0.6954
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.36	0.034	3.701	0.3865
Ratio: Number courses completed with C or better to number attempted	1	1.75	0.583	5.263	0.3178

Interpretation: *CCSSE* non-developmental students who reported participating in accelerated or fast-track developmental education during their first academic term were 0.45 times as likely to persist from fall to fall as students who reported they did not participate in accelerated or fast-track developmental education during their first academic term, controlling for all other variables in the model.

Practice: Require a placement test before a student can register for first academic term
[*CCSSE* ppq8]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   519.8612 (df=9), *p* <.0001, N= 2,169 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Students were required to take a placement test and the student took the test before registering for their first academic term	1	0.77	0.570	1.025	0.0726
Enrollment status	1	0.23	0.168	0.322	<.0001
Traditional age	1	0.97	0.953	0.995	0.0153
Generation status	1	0.78	0.571	1.075	0.1302
Count of terms enrolled	1	14.62	11.589	18.436	<.0001
Count of developmental education courses attempted	1	1.18	0.996	1.408	0.0552
Ratio: Number developmental education courses attempted to courses completed	1	0.71	0.265	1.904	0.4968
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.77	0.078	7.639	0.8229
Ratio: Number courses completed with C or better to number attempted	1	2.00	0.668	5.955	0.2160

Interpretation: *CCSSE* non-developmental students who reported that they were required to take a placement test and that they took the test before registering for their first academic term were 0.77 times as likely to persist from fall to fall as students who reported they were required to take a placement test but did not take the test, or reported a placement test was not required, controlling for all other variables in the model.

Practice: Awareness that a placement test was required [*CCSSE* ppq9]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   105.2244 (df=9), *p* <.0001, N= 467 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student became aware they were required to take a placement test more than one month prior to taking the test	1	0.55	0.295	1.016	0.0563
Enrollment status	1	0.33	0.167	0.663	0.0017
Traditional age	1	0.93	0.893	0.973	0.0014
Generation status	1	0.52	0.262	1.039	0.0641
Count of terms enrolled	1	12.06	7.428	19.593	<.0001
Count of developmental education courses attempted	1	1.19	0.835	1.690	0.3383
Ratio: Number developmental education courses attempted to courses completed	1	0.57	0.055	5.904	0.6379
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.23	0.004	418.026	0.9438
Ratio: Number courses completed with C or better to number attempted	1	8.53	0.427	170.500	0.1606

Interpretation: *CCSSE* non-developmental students who reported that they became aware that they were required to take a placement test more than a month before taking the test were 0.55 times as likely to persist from fall to fall as students who reported that they were not aware that a placement test was required until less than one month before taking the test, controlling for all other variables in the model.

Practice: Take placement test while still in high school [*CCSSE* ppq10]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   645.0441 (df=9), *p* <.0001, N= 2,791 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Took placement test while in high school	1	1.41	1.086	1.833	0.0100
Enrollment status	1	0.38	0.290	0.508	<.0001
Traditional age	1	0.99	0.973	1.007	0.2626
Generation status	1	0.94	0.714	1.223	0.6230
Count of terms enrolled	1	16.93	13.504	21.231	<.0001
Count of developmental education courses attempted	1	1.32	1.201	1.439	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.52	0.316	0.839	0.0078
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.30	0.052	1.693	0.1711
Ratio: Number courses completed with C or better to number attempted	1	0.76	0.332	1.752	0.5227

Interpretation: *CCSSE* developmental students who reported that they took a placement test while still in high school were 1.41 times more likely to persist from fall to fall than were students who reported that they did not take a placement test while still in high school, or could not remember, controlling for all other variables in the model.

Practice: Placement test results indicate need for developmental education in one or more academic skills area [*CCSSE* ppq13]

Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   523.7262 (df=9), *p* <.0001, N= 2,313 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Tested Into Developmental Education in one or more academic skills area	1	0.63	0.382	1.030	0.0653
Enrollment status	1	0.36	0.266	0.496	<.0001
Traditional age	1	0.98	0.962	1.001	0.0602
Generation status	1	0.92	0.685	1.245	0.6026
Count of terms enrolled	1	18.76	14.469	24.315	<.0001
Count of developmental education courses attempted	1	1.34	1.206	1.482	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.46	0.272	0.792	0.0049
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.23	0.034	1.540	0.1299
Ratio: Number courses completed with C or better to number attempted	1	0.59	0.225	1.523	0.2724

Interpretation: *CCSSE* developmental students who reported that their placement test results indicated the need for developmental education in one or more academic skills areas were 0.63 times as likely to persist from fall to fall as students who reported that their placement test results indicated no need for developmental education, controlling for all other variables in the model**.**

Practice: Academic early warning [*CCSSE* ppq17]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   309.1914 (df=9), *p* <.0001, N= 1,310 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Someone at the college contacts student if they are struggling with studies	1	0.62	0.407	0.948	0.0273
Enrollment status	1	0.30	0.202	0.453	<.0001
Traditional age	1	0.96	0.932	0.994	0.0202
Generation status	1	0.86	0.578	1.271	0.4428
Count of terms enrolled	1	13.06	9.782	17.430	<.0001
Count of developmental education courses attempted	1	1.12	0.921	1.350	0.2646
Ratio: Number developmental education courses attempted to courses completed	1	0.93	0.325	2.655	0.8905
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.70	0.051	9.423	0.7847
Ratio: Number courses completed with C or better to number attempted	1	1.46	0.430	4.982	0.5422

Interpretation: Interpretation: *CCSSE* non-developmental students who reported that someone at the college contacted them if they were struggling academically to help them get the assistance they need were 0.62 times as likely to persist from fall to fall as students who reported that someone did not contact them when they were struggling, controlling for all other variables in the model**.**

Practice: Participate in a required group learning experience [*CCSSE* ppq18]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   525.2949 (df=9), *p* <.0001, N= 2,187 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a required group learning experience during the current academic year	1	0.77	0.578	1.014	0.0626
Enrollment status	1	0.24	0.172	0.326	<.0001
Traditional age	1	0.98	0.954	0.997	0.0231
Generation status	1	0.80	0.587	1.095	0.1650
Count of terms enrolled	1	13.93	11.106	17.475	<.0001
Count of developmental education courses attempted	1	1.14	0.959	1.350	0.1385
Ratio: Number developmental education courses attempted to courses completed	1	0.76	0.289	2.000	0.5784
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.74	0.078	7.100	0.7956
Ratio: Number courses completed with C or better to number attempted	1	1.90	0.643	5.624	0.2449

Interpretation: Interpretation: *CCSSE* non-developmental students who reported that they participated in a required group learning experience at least once during the current academic year were 0.77 times as likely to persist from fall to fall as students who reported that they never participated in a required group learning experience during the current academic year, controlling for all other variables in the model**.**

Practice: Participate in supplemental instruction [*CCSSE* ppq20]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   523.3916 (df=9), *p* <.0001, N= 2,187 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in supplemental instruction at least once during the current academic year	1	0.60	0.412	0.877	0.0083
Enrollment status	1	0.24	0.171	0.325	<.0001
Traditional age	1	0.98	0.954	0.996	0.0219
Generation status	1	0.81	0.590	1.102	0.1763
Count of terms enrolled	1	14.12	11.235	17.733	<.0001
Count of developmental education courses attempted	1	1.15	0.968	1.362	0.1121
Ratio: Number developmental education courses attempted to courses completed	1	0.79	0.300	2.091	0.6374
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.83	0.086	7.952	0.8696
Ratio: Number courses completed with C or better to number attempted	1	1.86	0.627	5.523	0.2630

Interpretation: Interpretation: *CCSSE* non-developmental students who reported participating in supplemental instruction at least once during the current academic year were 0.60 times as likely to persist from fall to fall as students who reported that they never participated in supplemental instruction during the current academic year, controlling for all other variables in the model**.**

Practice: Students prepare for the placement test [*CCSSE* ppq11 & ppq12, combined]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   503.4944 (df=9), *p* <.0001, N= 2,102 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a brief (8 hour), intensive brush-up workshop and found it helpful	1	0.39	0.205	0.723	0.0030
Enrollment status	1	0.24	0.170	0.326	<.0001
Traditional age	1	0.97	0.948	0.991	0.0051
Generation status	1	0.80	0.582	1.100	0.1700
Count of terms enrolled	1	14.05	11.140	17.729	<.0001
Count of developmental education courses attempted	1	1.16	0.972	1.378	0.1016
Ratio: Number developmental education courses attempted to courses completed	1	0.78	0.289	2.113	0.6265
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.84	0.085	8.227	0.8772
Ratio: Number courses completed with C or better to number attempted	1	1.77	0.588	5.339	0.3094

Interpretation: *CCSSE* non-developmental students who reported participating in a brief, intensive brush-up workshop and finding it helpful were 0.39 times as likely to persist from fall to fall as students who did not report using any form of the college's test preparation options, or who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq11 & ppq12, combined]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   577.6196 (df=9), *p* <.0001, N= 2,477 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a brief (8 hour), intensive brush-up workshop and found it helpful	1	0.63	0.388	1.012	0.0561
Enrollment status	1	0.42	0.312	0.563	<.0001
Traditional age	1	0.99	0.974	1.010	0.3726
Generation status	1	1.03	0.774	1.370	0.8396
Count of terms enrolled	1	16.71	13.169	21.208	<.0001
Count of developmental education courses attempted	1	1.37	1.239	1.504	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.49	0.288	0.835	0.0086
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.24	0.037	1.504	0.1267
Ratio: Number courses completed with C or better to number attempted	1	0.57	0.235	1.363	0.2042

Interpretation: *CCSSE* developmental students who reported participating in a brief, intensive brush-up workshop and finding it helpful were 0.63 times as likely to persist from fall to fall as students who did not report using any form of the college's test preparation options, or who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Students prepare for the placement test [*CCSSE* ppq 11 & ppq12, combined]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   503.1815 (df=9), *p* <.0001, N= 2,095 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a multi-day or multi-week brush-up program and found it helpful	1	0.42	0.200	0.892	0.0239
Enrollment status	1	0.23	0.168	0.323	<.0001
Traditional age	1	0.97	0.947	0.990	0.0041
Generation status	1	0.85	0.616	1.166	0.3096
Count of terms enrolled	1	14.40	11.389	18.202	<.0001
Count of developmental education courses attempted	1	1.13	0.951	1.349	0.1615
Ratio: Number developmental education courses attempted to courses completed	1	0.84	0.311	2.260	0.7284
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.59	0.059	5.888	0.6516
Ratio: Number courses completed with C or better to number attempted	1	1.71	0.566	5.144	0.3423

Interpretation: *CCSSE* non-developmental students who reported participating in a multi-day or multi-week brush-up program and found it helpful were 0.42 times as likely to persist from fall to fall as students who reported they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Participate in a study skills course [*CCSSE* main q8f]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   964.1568 (df=9), *p* <.0001, N= 4,228 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participated in a study skills course	1	0.66	0.521	0.834	0.0005
Enrollment status	1	0.50	0.400	0.614	<.0001
Traditional age	1	0.99	0.976	1.003	0.1212
Generation status	1	1.10	0.883	1.371	0.3947
Count of terms enrolled	1	16.87	14.030	20.285	<.0001
Count of developmental education courses attempted	1	1.24	1.152	1.337	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.50	0.330	0.758	0.0011
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.38	0.098	1.473	0.1613
Ratio: Number courses completed with C or better to number attempted	1	0.93	0.469	1.855	0.8418

Interpretation: *CCSSE* developmental students who reported they participated in a study skills course were 0.66 times as likely to persist from fall to fall as students who reported they either planned to participate or that they have not participated nor planned to participate in a study skills course, controlling for all other variables in the model.

Practice: Participate in an organized learning community [*CCSSE* main q8i]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   969.1216 (df=9), *p* <.0001, N= 4,235 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in an organized learning community	1	0.65	0.471	0.896	0.0086
Enrollment status	1	0.50	0.404	0.619	<.0001
Traditional age	1	0.99	0.975	1.002	0.1057
Generation status	1	1.11	0.893	1.387	0.3413
Count of terms enrolled	1	16.93	14.084	20.352	<.0001
Count of developmental education courses attempted	1	1.21	1.121	1.295	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.54	0.361	0.822	0.0038
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.44	0.112	1.691	0.2298
Ratio: Number courses completed with C or better to number attempted	1	0.98	0.495	1.957	0.9638

Interpretation: *CCSSE* developmental students who reported that they participated in an organized learning community were 0.65 times as likely to persist from fall to fall as students who reported they either planned to participate or that they have not participated nor planned to participate in an organized learning community during their first academic term, controlling for all other variables in the model.

Outcome 3: Persistence (Part 2 of 2 – Fall-to-Spring)

Practice: Registration before classes begin [SENSE ppq1]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   234.2713(df=9), *p* <.0001, N= 830 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Registering for all courses before the first class session	1	4.44	1.505	13.095	0.0069
Enrollment status	1	0.96	0.600	1.522	0.8483
Traditional age	1	1.02	0.968	1.072	0.4730
Generation status	1	0.88	0.540	1.443	0.6187
Count of terms enrolled	1	25.15	16.557	38.207	<.0001
Count of developmental education courses attempted	1	4.08	1.647	10.107	0.0024
Ratio: Number developmental education courses attempted to courses completed	1	0.01	<0.001	0.110	0.0003
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.51	0.068	3.887	0.5190
Ratio: Number courses completed with C or better to number attempted	1	1.55	0.509	4.700	0.4415

Interpretation: *SENSE* non-developmental students who reported that they registered for all classes before the first class session were 4.44 times more likely to persist from fall to spring than were students who did not report registering for all classes before the first class session, controlling for all other variables in the model.

Practice: Students prepare for the placement test [SENSE ppq7 & ppq8, combined]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   403.0555 (df=9), *p* <.0001, N= 1,530 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Using online or printed materials to prepare for the placement test and finding those materials helpful	1	1.59	0.967	2.611	0.0678
Enrollment status	1	0.80	0.489	1.317	0.3836
Traditional age	1	1.02	0.989	1.048	0.2304
Generation status	1	1.05	0.652	1.688	0.8446
Count of terms enrolled	1	174.16	100.005	303.315	<.0001
Count of developmental education courses attempted	1	1.25	1.003	1.549	0.0473
Ratio: Number developmental education courses attempted to courses completed	1	0.62	0.364	1.052	0.0765
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.48	0.083	2.743	0.4078
Ratio: Number courses completed with C or better to number attempted	1	1.34	0.422	4.246	0.6205

Interpretation: *SENSE* developmental students who reported using online or printed materials to prepare for the placement test and finding those materials helpful were 1.59 times more likely to persist from fall to spring than were students who did not report they did not use any form of the college's test preparation options, or who reported using them but did not find them helpful, controlling for all other variables in the model.

Practice: Require a placement test to assess skills in reading, writing, and/or math before allowing registration for classes. [SENSE main q12a]

Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square 1293.4831(df=9), *p* <.0001, N= 4,812 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Before registering for classes, student is required to take a placement test to assess academic skills	1	0.68	0.452	1.020	0.0624
Enrollment status	1	1.01	0.792	1.290	0.9300
Traditional age	1	1.02	0.999	1.032	0.0624
Generation status	1	0.85	0.669	1.086	0.1974
Count of terms enrolled	1	72.51	55.972	93.926	<.0001
Count of developmental education courses attempted	1	1.62	1.442	1.819	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.42	0.316	0.555	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.40	0.159	0.991	0.0477
Ratio: Number courses completed with C or better to number attempted	1	1.33	0.799	2.213	0.2723

Interpretation: *SENSE* developmental students who reported they were required to take a placement test to assess skills in reading, writing, and/or math before they could registering for classes were 0.68 times as likely to persist from fall to spring as students who reported they were not required to take a placement test prior to registering for classes, controlling for all other variables in the model.

Practice: Take a placement test [SENSE main 12b]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square 586.5074 (df=9), *p* <.0001, N= 2,079 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Took a placement test	1	1.57	1.065	2.325	0.0227
Enrollment status	1	0.84	0.620	1.149	0.2821
Traditional age	1	1.01	0.979	1.038	0.5824
Generation status	1	1.13	0.837	1.538	0.4161
Count of terms enrolled	1	24.61	18.853	32.122	<.0001
Count of developmental education courses attempted	1	1.82	1.357	2.432	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.10	0.031	0.295	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.38	0.389	4.874	0.6202
Ratio: Number courses completed with C or better to number attempted	1	1.85	0.951	3.595	0.0698

Interpretation: *SENSE* non-developmental students who reported that they took a placement test were 1.57 times more likely to persist from fall to spring than were students who reported that they did not take a placement test, controlling for all other variables in the model.

Practice: Instructors clearly explain academic and support services available [SENSE main q18l]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   1298.6084 (df=9), *p* <.0001, N= 4,818 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Academic and support services explained by all instructors	1	1.37	1.059	1.776	0.0168
Enrollment status	1	1.01	0.788	1.282	0.9669
Traditional age	1	1.01	0.998	1.031	0.0805
Generation status	1	0.84	0.661	1.071	0.1606
Count of terms enrolled	1	72.59	56.044	94.008	<.0001
Count of developmental education courses attempted	1	1.58	1.413	1.777	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.42	0.313	0.550	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.35	0.142	0.879	0.0252
Ratio: Number courses completed with C or better to number attempted	1	1.22	0.736	2.021	0.4418

Interpretation: *SENSE* developmental students who reported that ALL of their instructors clearly explained academic and support services available to them were 1.37 times more likely to persist from fall to spring than were those students who reported that not all of their instructors explained academic and support services available to them, controlling for all other variables in the model.

Practice: Participate in supplemental instruction [SENSE main q19e]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   587.2271(df=9), *p* <.0001, N= 2,089 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in supplemental instruction during the first academic term at least once	1	0.66	0.466	0.937	0.0200
Enrollment status	1	0.85	0.626	1.159	0.3082
Traditional age	1	1.01	0.981	1.038	0.5392
Generation status	1	1.15	0.850	1.562	0.3598
Count of terms enrolled	1	24.60	18.852	32.097	<.0001
Count of developmental education courses attempted	1	2.02	1.476	2.752	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.07	0.023	0.240	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.18	0.334	4.171	0.7978
Ratio: Number courses completed with C or better to number attempted	1	1.68	0.866	3.255	0.1249

Interpretation: *SENSE* non-developmental students who reported that they participated in supplemental instruction at least once during the first three weeks of their first academic term were 0.66 times as likely to persist from fall to spring as those students who reported that they never participated in supplemental instruction during their first three weeks, controlling for all other variables in the model.

Practice: Work with other students on a project or assignment during class [SENSE main q19g]

Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   589.6617 (df=9), *p* <.0001, N= 2,092 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Work with other students on a project or assignment during class at least once	1	0.71	0.511	0.999	0.0494
Enrollment status	1	0.85	0.622	1.147	0.2800
Traditional age	1	1.01	0.978	1.036	0.6474
Generation status	1	1.12	0.826	1.513	0.4696
Count of terms enrolled	1	24.73	18.946	32.273	<.0001
Count of developmental education courses attempted	1	1.71	1.292	2.255	0.0002
Ratio: Number developmental education courses attempted to courses completed	1	0.12	0.039	0.358	0.0002
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.34	0.384	4.701	0.6442
Ratio: Number courses completed with C or better to number attempted	1	1.88	0.970	3.635	0.0617

Interpretation: *SENSE* non-developmental students who reported that they worked with other students on a project or assignment during class at least once during the first three weeks of their first academic term were 0.71 times as likely to persist from fall to spring as those students who reported that they never worked with other students on a project or assignment during class during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a student-initiated (not required) study group outside of class [SENSE main q19j]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square 1293.4842 (df=9), *p* <.0001, N= 4,794 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a student-initiated study group outside of class at least once	1	0.73	0.539	0.972	0.0316
Enrollment status	1	1.00	0.787	1.280	0.9735
Traditional age	1	1.02	1.000	1.032	0.0558
Generation status	1	0.86	0.673	1.090	0.2084
Count of terms enrolled	1	71.35	55.135	92.329	<.0001
Count of developmental education courses attempted	1	1.61	1.434	1.804	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.41	0.313	0.550	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.36	0.146	0.906	0.0298
Ratio: Number courses completed with C or better to number attempted	1	1.30	0.784	2.158	0.3091

Interpretation: *SENSE* developmental students who report that they participated in a student-initiated (not required) study group outside of class at least once during the first three weeks of their first academic term were 0.73 times as likely to persist from fall to spring as those students who reported that they never participated in a student-initiated study group outside of class during their first three weeks, controlling for all other variables in the model.

Practice: Participate in a student organization [SENSE main q20i]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square   1230.7116 (df=9), *p* <.0001, N= 4,572 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	**Upper**	
Participated in a student organization at least once before the end of the first three weeks of the first academic term	1	0.68	0.479	0.964	0.0304
Enrollment status	1	0.96	0.744	1.237	0.7476
Traditional age	1	1.02	0.999	1.033	0.0649
Generation status	1	0.80	0.621	1.028	0.0811
Count of terms enrolled	1	84.63	64.352	111.303	<.0001
Count of developmental education courses attempted	1	1.52	1.351	1.714	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.45	0.337	0.604	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.28	0.106	0.710	0.0076
Ratio: Number courses completed with C or better to number attempted	1	1.08	0.633	1.846	0.7759

Interpretation: *SENSE* developmental students who reported that they participated in a student organization at least once during the first three weeks of their first academic term were 0.68 times as likely to persist from fall to spring as those students who reported that they never participated in a student organization during their first three weeks, controlling for all other variables in the model.

Practice: Learned to understand academic strengths and weaknesses within a class or through another experience [SENSE main q21b]
Results for *SENSE* respondents – Developmental students

Overall Model: Wald Chi-Square 1303.5171 (df=9), *p* <.0001, N= 4,834 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Within a class or through another experience at the college, the student learned to understand their academic strengths and weaknesses	1	1.26	0.959	1.656	0.0972
Enrollment status	1	1.01	0.791	1.285	0.9480
Traditional age	1	1.02	1.000	1.032	0.0569
Generation status	1	0.86	0.675	1.092	0.2132
Count of terms enrolled	1	71.85	55.552	92.931	<.0001
Count of developmental education courses attempted	1	1.59	1.414	1.779	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.41	0.309	0.544	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.37	0.149	0.920	0.0323
Ratio: Number courses completed with C or better to number attempted	1	1.27	0.764	2.097	0.3600

Interpretation: *SENSE* developmental students who reported that they agreed or strongly agreed that, within a class or through another experience at their college, they learned to understand their academic strengths and weaknesses were 1.26 times more likely to persist from fall to spring than were those students who responded "neutral", "disagree", or "strongly disagree" that they learned to understand their academic strengths and weaknesses, controlling for all other variables in the model.

Practice: Participate in any orientation [SENSE main q11]
Results for *SENSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   583.1884 (df=9), *p* <.0001, N= 2,074 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Took part in an online or on-campus orientation before the beginning of classes, or enrolled in an orientation course during the first academic term	1	1.44	1.037	2.001	0.0295
Enrollment status	1	0.86	0.631	1.166	0.3268
Traditional age	1	1.01	0.981	1.038	0.5403
Generation status	1	1.12	0.825	1.512	0.4756
Count of terms enrolled	1	24.60	18.830	32.137	<.0001
Count of developmental education courses attempted	1	1.68	1.270	2.227	0.0003
Ratio: Number developmental education courses attempted to courses completed	1	0.13	0.042	0.382	0.0002
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.31	0.373	4.592	0.6741
Ratio: Number courses completed with C or better to number attempted	1	1.81	0.934	3.498	0.0787

Interpretation: *SENSE* non-developmental students who reported that they participated in an online or on-campus orientation or enrolled in an orientation course during their first academic term were 1.44 times more likely to persist from fall to spring than were those students who indicated that they did not participate in any orientation, controlling for all other variables in the model.

Practice: Attending any orientation [*CCSSE* ppq2]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   806.6542 (df=9), *p* <.0001, N= 3,302 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in some form of orientation	1	1.30	1.055	1.602	0.0138
Enrollment status	1	0.85	0.684	1.053	0.1354
Traditional age	1	0.99	0.971	1.003	0.1077
Generation status	1	0.66	0.523	0.837	0.0006
Count of terms enrolled	1	8.31	7.142	9.657	<.0001
Count of developmental education courses attempted	1	1.28	1.067	1.525	0.0077
Ratio: Number developmental education courses attempted to courses completed	1	0.41	0.219	0.768	0.0053
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.95	0.226	3.973	0.9413
Ratio: Number courses completed with C or better to number attempted	1	1.19	0.577	2.434	0.6434

Interpretation: *CCSSE* non-developmental students who reported attending an online or on-campus orientation or enrolled in an orientation course during their first term were 1.30 times more likely to persist from fall to spring than were students who did not participate in any type of orientation, controlling for all other variables in the model.

Practice: Enroll in a student success course during first academic term [*CCSSE* ppq5]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   934.8073 (df=9), *p* <.0001, N= 3,804 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Enroll in a student success course during the first academic term	1	0.68	0.519	0.901	0.0068
Enrollment status	1	0.80	0.636	1.002	0.0523
Traditional age	1	1.00	0.987	1.014	0.9627
Generation status	1	0.96	0.765	1.201	0.7111
Count of terms enrolled	1	11.08	9.272	13.240	<.0001
Count of developmental education courses attempted	1	1.77	1.559	1.998	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.30	0.199	0.444	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.36	0.095	1.375	0.1358
Ratio: Number courses completed with C or better to number attempted	1	1.27	0.651	2.494	0.4796

Interpretation: *CCSSE* developmental students who reported that they enrolled in a student success course during their first academic term were 0.68 times as likely to persist from fall to spring as students who reported they did not enroll in a student success course during their first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience during the first academic term [*CCSSE* ppq3]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square 784.1670 (df=9), *p* <.0001, N= 3,221 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a First-year experience during the first academic term	1	1.71	1.293	2.260	0.0002
Enrollment status	1	0.83	0.664	1.026	0.0844
Traditional age	1	0.99	0.976	1.009	0.3565
Generation status	1	0.61	0.481	0.780	<.0001
Count of terms enrolled	1	8.57	7.336	10.011	<.0001
Count of developmental education courses attempted	1	1.32	1.099	1.596	0.0031
Ratio: Number developmental education courses attempted to courses completed	1	0.36	0.189	0.692	0.0021
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.84	0.197	3.585	0.8148
Ratio: Number courses completed with C or better to number attempted	1	1.18	0.573	2.446	0.6488

Interpretation: *CCSSE* non-developmental students who reported participating in a first-year experience course during their first academic term were 1.71 times more likely to persist from fall to spring than were students who reported they did not participate in a first-year experience course during their first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during first academic term [*CCSSE* ppq3 & ppq5]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   787.7586(df=9), *p* <.0001, N= 3,233 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience **or** student success course during the first academic term	1	1.47	1.148	1.892	0.0023
Enrollment status	1	0.82	0.658	1.017	0.0706
Traditional age	1	0.99	0.975	1.008	0.3079
Generation status	1	0.62	0.485	0.785	<.0001
Count of terms enrolled	1	8.58	7.347	10.020	<.0001
Count of developmental education courses attempted	1	1.32	1.092	1.584	0.0039
Ratio: Number developmental education courses attempted to courses completed	1	0.37	0.191	0.704	0.0026
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.87	0.205	3.719	0.8547
Ratio: Number courses completed with C or better to number attempted	1	1.20	0.578	2.468	0.6308

Interpretation: *CCSSE* non-developmental students who reported that they participated in a student success course or first-year experience during their first academic term were 1.47 times more likely to persist from fall to spring than were students who reported that they did not participate in a student success course or first-year experience during first academic term, controlling for all other variables in the model.

Practice: Participate in a first-year experience **or** student success course during first academic term [*CCSSE* ppq3 & ppq5]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   941.5366 (df=9), *p* <.0001, N= 3,835 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participate in a first-year experience **or** student success course during the first academic term	1	0.74	0.588	0.928	0.0093
Enrollment status	1	0.79	0.629	0.990	0.0406
Traditional age	1	1.00	0.986	1.013	0.9565
Generation status	1	0.96	0.767	1.204	0.7317
Count of terms enrolled	1	11.26	9.417	13.456	<.0001
Count of developmental education courses attempted	1	1.75	1.549	1.980	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.30	0.199	0.444	<.0001
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.36	0.095	1.344	0.1280
Ratio: Number courses completed with C or better to number attempted	1	1.25	0.644	2.431	0.5077

Interpretation: *CCSSE* developmental students who reported that they participated in a student success course or first-year experience during their first academic term were 0.74 times as likely to persist from fall to spring as students who reported that they did not participate in a student success course or first-year experience during first academic term, controlling for all other variables in the model.

Practice: Awareness that a placement test was required [*CCSSE* ppq9]
Results for *CCSSE* respondents – Developmental students

Overall Model: Wald Chi-Square   234.9049 (df=9), *p* <.0001, N= 950 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student became aware they were required to take a placement test more than one month prior to taking the test	1	0.53	0.337	0.832	0.0058
Enrollment status	1	0.67	0.414	1.076	0.0971
Traditional age	1	1.00	0.966	1.024	0.7225
Generation status	1	0.89	0.577	1.385	0.6169
Count of terms enrolled	1	12.85	8.924	18.508	<.0001
Count of developmental education courses attempted	1	1.67	1.315	2.107	<.0001
Ratio: Number developmental education courses attempted to courses completed	1	0.35	0.162	0.738	0.0060
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	1.20	0.075	19.092	0.8986
Ratio: Number courses completed with C or better to number attempted	1	1.22	0.298	4.974	0.7836

Interpretation: *CCSSE* developmental students who reported that they became aware that they were required to take a placement test more than a month before taking the test were 0.53 times as likely to persist from fall to spring as students who reported that they were not aware that a placement test was required until less than one month before taking the test, controlling for all other variables in the model.

Practice: Placement test results indicate need for developmental education in one or more academic skills area [*CCSSE* ppq13]

Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   300.3890 (df=9), *p* <.0001, N= 1208 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Tested Into Developmental Education in one or more academic skills area	1	0.72	0.495	1.044	0.0828
Enrollment status	1	0.77	0.516	1.142	0.1926
Traditional age	1	0.98	0.954	1.008	0.1540
Generation status	1	0.72	0.496	1.048	0.0863
Count of terms enrolled	1	8.39	6.496	10.826	<.0001
Count of developmental education courses attempted	1	1.43	1.077	1.900	0.0133
Ratio: Number developmental education courses attempted to courses completed	1	0.46	0.176	1.202	0.1132
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.98	0.085	11.443	0.9895
Ratio: Number courses completed with C or better to number attempted	1	1.29	0.351	4.744	0.7011

Interpretation: *CCSSE* non-developmental students who reported that their placement test results indicated the need for developmental education in one or more academic skills areas were 0.72 times as likely to persist from fall to spring as students who reported that their placement test results indicated no need for developmental education, controlling for all other variables in the model**.**

Practice: Placement test scores indicated the need for developmental education in at least one academic skills area [*CCSSE* ppq14]
Results for *CCSSE* respondents – Non-developmental students

Overall Model: Wald Chi-Square   154.4360 (df=9), *p* <.0001, N= 607 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Student told they are required to take one or more developmental education courses during their first academic term	1	0.65	0.395	1.056	0.0811
Enrollment status	1	1.09	0.629	1.891	0.7585
Traditional age	1	0.96	0.921	0.994	0.0229
Generation status	1	0.69	0.408	1.149	0.1515
Count of terms enrolled	1	6.93	4.938	9.735	<.0001
Count of developmental education courses attempted	1	1.45	1.077	1.949	0.0142
Ratio: Number developmental education courses attempted to courses completed	1	0.48	0.173	1.335	0.1597
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.88	0.042	18.118	0.9321
Ratio: Number courses completed with C or better to number attempted	1	1.11	0.179	6.834	0.9144

Interpretation: *CCSSE* non-developmental students who reported being required to take at least one developmental education course during their first academic term based on placement test results were 0.65 times as likely to persist from fall to spring as students who reported they were told they should take at least one developmental education course during their first academic term, but it was not required, controlling for all other variables in the model**.**

Practice: Academic early warning [*CCSSE* ppq17]
Results for *CCSSE* respondents

Overall Model: Wald Chi-Square   325.9212 (df=9), *p* <.0001, N= 1,310 terms

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Someone at the college contacts student if they are struggling with studies	1	0.67	0.464	0.968	0.0327
Enrollment status	1	1.07	0.751	1.514	0.7193
Traditional age	1	0.96	0.939	0.991	0.0086
Generation status	1	0.66	0.466	0.929	0.0175
Count of terms enrolled	1	7.62	6.055	9.597	<.0001
Count of developmental education courses attempted	1	1.17	0.922	1.494	0.1942
Ratio: Number developmental education courses attempted to courses completed	1	0.65	0.268	1.577	0.3405
Ratio: Number developmental education courses withdrawn/ dropped to number attempted	1	0.75	0.107	5.214	0.7697
Ratio: Number courses completed with C or better to number attempted	1	0.93	0.356	2.427	0.8813

Interpretation: Interpretation: *CCSSE* non-developmental students who reported that someone at the college contacted them if they were struggling academically to help them get the assistance they need were 0.67 times as likely to persist from fall to spring as students who reported that someone did not contact them when they were struggling, controlling for all other variables in the model**.**

Participating in Multiple Structured Group Learning Experiences

NOTE: All analyses reported in this section include only developmental students.

Practice: Participating in one or more structured group learning experiences
Results for *SENSE* respondents – Pass developmental math

Overall Model: Wald Chi-Square 52.5259(df=4), *p* <.0001, N= 2,944

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more structured group learning experiences	1	1.27	1.182	1.367	<.0001
Enrollment status	1	1.12	0.955	1.318	0.1604
Traditional age	1	1.32	1.098	1.582	0.0031
Generation status	1	0.96	0.831	1.119	0.6313

Interpretation: *SENSE* developmental students who reported participating in one or more structured group learning experiences were 1.27 times more likely to pass at least one developmental math class for each additional structured group learning experience in which they participated. In other words, each additional structured group learning experience that these students participated in improved their likelihood of attaining positive outcomes.

Practice: Participating in one or more structured group learning experiences
Results for *SENSE* respondents – Pass developmental English

Overall Model: Wald Chi-Square 329.9871 (df=4), *p* <.0001, N= 2,944

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more structured group learning experiences	1	2.18	1.998	2.374	<.0001
Enrollment status	1	0.79	0.664	0.935	0.0065
Traditional age	1	0.87	0.712	1.058	0.1606
Generation status	1	0.69	0.592	0.815	<.0001

Interpretation: *SENSE* developmental students who reported participating in one or more structured group learning experiences were 2.18 times more likely to pass at least one developmental English class for each additional structured group learning experience in which they participated. In other words, each additional structured group learning experience that these students participated in improved their likelihood of attaining positive outcomes.

Practice: Participating in one or more structured group learning experiences
Results for *CCSSE* respondents – Pass developmental math

Overall Model: Wald Chi-Square 33.1010 (df=4), *p* <.0001, N=1,775

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more structured group learning experiences	1	1.15	1.056	1.251	0.0013
Enrollment status	1	1.08	0.864	1.355	0.4917
Traditional age	1	1.24	0.996	1.550	0.0539
Generation status	1	0.66	0.532	0.807	<.0001

Interpretation: *CCSSE* developmental students who reported participating in one or more structured group learning experiences were 1.15 times more likely to pass at least one developmental math class for each additional structured group learning experience in which they participated. In other words, each additional structured group learning experience that these students participated in improved their likelihood of attaining positive outcomes.

Practice: Participating in one or more structured group learning experiences
Results for *CCSSE* respondents – Pass developmental English

Overall Model: Wald Chi-Square 137.3267 (df=4), *p* <.0001, N=1,775

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more structured group learning experiences	1	1.55	1.420	1.691	<.0001
Enrollment status	1	1.24	0.980	1.569	0.0734
Traditional age	1	0.72	0.577	0.908	0.0052
Generation status	1	0.57	0.467	0.707	<.0001

Interpretation: *CCSSE* developmental students who reported participating in one or more structured group learning experiences were 1.55 times more likely to pass at least one developmental English class for each additional structured group learning experience in which they participated. In other words, each additional structured group learning experience that these students participated in improved their likelihood of attaining positive outcomes.

Practice: Participating in one or more structured group learning experiences
Results for *CCSSE* respondents – Pass gatekeeper English

Overall Model: Wald Chi-Square 75.6026 (df=4), *p* <.0001, N=1,775

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more structured group learning experiences	1	1.41	1.287	1.547	<.0001
Enrollment status	1	1.47	1.124	1.920	0.0049
Traditional age	1	0.92	0.718	1.178	0.5074
Generation status	1	0.72	0.576	0.906	0.0048

Interpretation: *CCSSE* developmental students who reported participating in one or more structured group learning experiences were 1.41 times more likely to pass a gatekeeper English class for each additional structured group learning experience in which they participated. In other words, each additional structured group learning experience that these students participated in improved their likelihood of attaining positive outcomes.

Practice: Participating in one or more structured group learning experiences
Results for *SENSE* respondents – Pass gatekeeper English

Overall Model: Wald Chi-Square 40.9170 (df=4), *p* <.0001, N=2,549

Effect	Unit	OR Estimate	95% Confidence Limits		Pr > ChiSquare
			Lower	Upper	
Participating in one or more structured group learning experiences	1	1.37	1.237	1.511	<.0001
Enrollment status	1	0.99	0.780	1.243	0.8970
Traditional age	1	0.74	0.562	0.981	0.0362
Generation status	1	0.91	0.735	1.126	0.3860

Interpretation: *SENSE* developmental students who reported participating in one or more structured group learning experiences were 1.37 times more likely to pass a gatekeeper English class for each additional structured group learning experience in which they participated. In other words, each additional structured group learning experience that these students participated in improved their likelihood of attaining positive outcomes.