

# The Relationship between Student Engagement and Success at Santa Monica College:

THE COMMUNITY COLLEGE SURVEY OF STUDENT ENGAGEMENT (CCSSE) FINDINGS



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# Table of Contents

<b>Key Findings</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
<b>Methodology</b> .....	<b>6</b>
Active and Collaborative Learning.....	6
Student Effort.....	7
Academic Challenge .....	8
Student-Faculty Interaction.....	9
Support for Learners .....	9
Standardized Benchmark Scores .....	10
Raw Benchmark Scores .....	11
Weighted Benchmark Scores.....	11
Individual Item Scores .....	11
<b>Benchmark Performance Comparison to Peer Colleges (RQ1)</b> .....	<b>12</b>
<b>Benchmark Performance Comparison by Student Subgroups (RQ2)</b> .....	<b>14</b>
Benchmark Performance by Student Gender .....	14
Benchmark Performance by Student Ethnicity/Race .....	15
Benchmark Performance by Student Age Group .....	18
Benchmark Performance by International Student Status .....	20
Benchmark Performance by Unit Load .....	26
<b>The Impact of CCSSE Benchmarks on Student Outcomes (RQ3)</b> .....	<b>28</b>
Impact of CCSSE Benchmarks on First-Year GPA .....	29
Impact of CCSSE Benchmarks on Spring-to-Fall Persistence .....	30
<b>References</b> .....	<b>31</b>

# Key Findings

The Community College Survey of Student Engagement (CCSSE) is a national instrument which measures student engagement through 5 benchmarks: Active & Collaborative Learning, Student Effort, Academic Challenge, Student-Faculty Interaction, and Support for Learners. The CCSSE was administered to 1076 students in 46 randomly selected class sections at Santa Monica College in the spring 2012 term. The following highlight the key findings of SMC's performance on the CCSSE benchmarks:

- Compared to the overall SMC student population, the following subsets of students were overrepresented in the CCSSE sample: female, full-time, Asian/Pacific Islander, international, and aged 20-24;
- SMC performed similarly to the overall national CCSSE cohort as well as the extra-large college group on all five benchmarks;
- SMC students reported asking questions in class or contributing to classroom discussion significantly less frequently than the national and extra-large college CCSSE cohorts;
- SMC students' perceived *Support for Learners* differed by ethnicity such that Black and Hispanic students perceived SMC to offer greater support for learners than did Asian/Pacific Islander and White students.;
- International students reported being less engaged on all five benchmarks than did non-international (domestic) students;
- Part-time students were less engaged than their full-time counterparts on the *Active & Collaborative Learning*, *Student Effort*, *Academic Challenge*, and *Student-Faculty Interaction* benchmarks but not *Support for Learners*.
- Among first-time freshmen, student engagement and first-year GPA showed a significant predictive relationship, such that greater student engagement was associated with higher first-year GPAs, even when controlling for the influence of student characteristics such as gender, ethnicity, age, international status, unit load, first-generation status, etc.
- Among first-time freshmen, student engagement did not predict whether the student would persist to the subsequent fall term, however the majority of first-time freshmen (85%) did persist.

# Introduction

There is mounting evidence suggesting that student engagement positively impacts multiple educational outcomes such as learning, persistence, and degree attainment (Pascarella & Terenzini, 2005). Numerous studies have found that the more students are engaged in specific educational practices and student behaviors, the more likely they are to persist and achieve academic success (Pascarella & Terenzini; Tinto, 1993). A national survey instrument, the Community College Survey of Student Engagement (CCSSE; pronounced “Sessie”), was developed by the Center for Community College Student Engagement at the University of Texas at Austin to assess student engagement. CCSSE measures “the extent to which students are engaged in empirically derived good educational practices and what they gain from their college experience” (Kuh, 2001, p. 2). Items on the CCSSE relate to students’ involvement in the programs and educational practices that have been documented in the research literature to positively impact student success.

The CCSSE has been administered in hundreds of different community colleges across the nation since its development in 2001. The survey is designed to provide community college practitioners a valuable yardstick for current levels of student engagements at their institutions and to inform college planning and decision-making processes. Studies assessing the psychometric properties of the CCSSE reveal that the instrument is a valid and reliable measure for student engagement, and the “survey instrument is a valuable proxy for student success” (McClenney & Marti, 2006, p. 2). For a more detailed description of the CCSSE instrument, please visit: [www.ccsse.org](http://www.ccsse.org).



Along with 265 other community college across the nation, Santa Monica College (SMC) participated in the spring 2012 administration of the CCSSE. It was the first administration of CCSSE in the college’s history. A total of 1,076 unique students enrolled in 46 randomly selected on-ground classes participated in the 50-minute survey. Twenty students reported taking the survey more than once and only their first survey responses were included in the analyses.

The findings from the survey are described in the current report.

## CCSSE SAMPLE

- ▶ 57% of the CCSSE sample was female
- ▶ The largest proportion of CCSSE students were Hispanic (30%), followed by White (28%), Asian/Pacific Islander (23%), and Black (8%)
- ▶ 65% were full-time students (enrolled in 12 or more credit units)
- ▶ 28% were under 20 year of age; 50% were between the ages of 20 and 24
- ▶ 25% were international F-1 visa students

The report investigates three research questions:

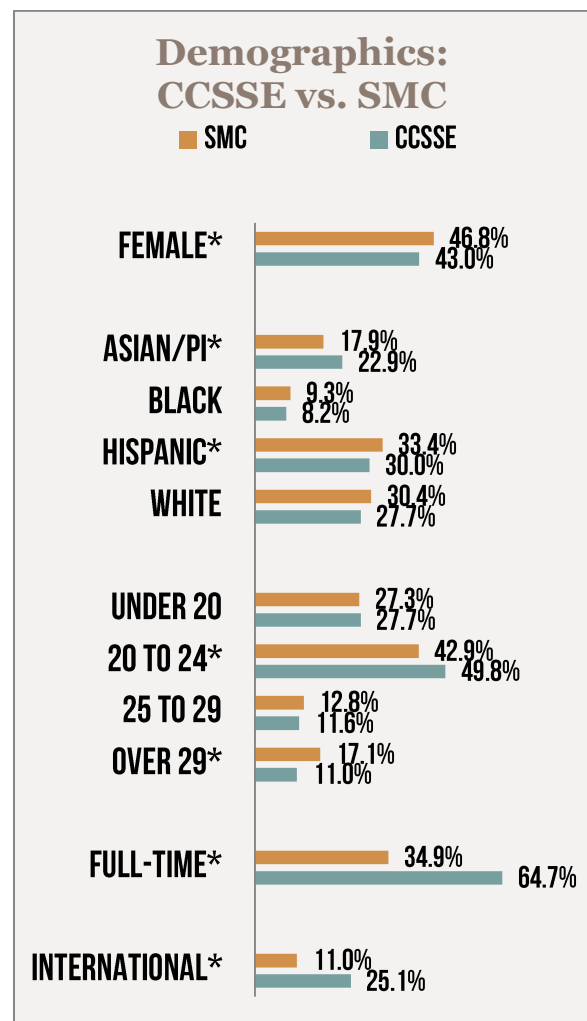
**1 HOW WELL DOES SMC PERFORM ON THE CCSSE BENCHMARKS WHEN COMPARED WITH PEER COLLEGES?**

**2 DO STUDENTS DIFFER ON THE CCSSE BENCHMARKS IN TERMS OF GENDER, ETHNICITY/RACE, AGE, UNIT LOAD, AND RESIDENCE STATUS?**

**3 WHAT IS THE IMPACT OF STUDENT ENGAGEMENT ON SUCCESS OUTCOMES (FIRST-YEAR GPA AND PERSISTENCE) FOR FIRST-TIME FRESHMEN?**

The CCSSE is designed to measure five benchmarks, groups of conceptually related survey items, of student engagement in community colleges, including active and collaborative learning, student effort, academic challenge, student-faculty interaction, and support for learners. The five benchmarks of student engagement have been supported by the research literature as educational practices that positively impact student learning and persistence.

The following figure compares the CCSSE sample to the SMC spring 2012 credit population in terms of gender, ethnicity/race, age group, enrollment status, and international student status. A one-proportion z test was used to determine whether the CCSSE sample differ significantly from the SMC student population in terms of various student characteristics. An asterisk is used to indicate statistically significant differences between the CCSSE sample and the SMC population.



The study used a probability sampling procedure. All credit courses offered in spring 2012 were included in a pool from which a random sample of course sections was chosen for the in-class administration of CCSSE. In theory, the large random sampling of class sections should lead to a sample that is representative of the college population. However, a comparison of student characteristic variables shows that the subset of students in the CCSSE sample is different from the overall credit student population with the following groups being overrepresented in the CCSSE sample:

- Female students,
- Full-time students,
- Asian/Pacific Islanders,
- 20 to 24 year olds, and
- International students.

The overrepresentation of Asian/Pacific Islander, international, and full-time students in the CCSSE sample may be a function of enrollment status. Because the survey was sampled at the classroom level, full-time students were more likely, by definition, to be selected to participate in the study than students enrolled in fewer credit units. Disproportionately more international students are enrolled in classes at SMC full-time when compared with non-international students (due to the unit load requirements for a student visa), and the largest proportions of international students are from Asian/Pacific Islander countries. As a result, these student groups are more likely to be randomly chosen to participate in the survey.

The following section describes the methodology used to answer the study's three research questions.

## THE FIVE BENCHMARKS OF CCSSE

1. **Active and Collaborative Learning**  
Active involvement and collaboration with others in learning process
2. **Student Effort**  
Student behaviors for example, study habits and use of tutoring services
3. **Academic Challenge**  
Use of complex critical thinking skills
4. **Student-Faculty Interaction**  
Personal interaction with faculty members
5. **Support for Learners**  
Student perceptions of support of college and use of support services

# Methodology

Decades of education research aimed at identifying the behaviors and characteristics associated with successful student outcomes (e.g. learning, persistence, and degree attainment) have yielded the broader unifying theme of “student engagement” which represents the degree to which students are engaged with college faculty and staff, other students, and their studies. The CCSSE defines and measures student engagement in terms of five major benchmarks, however all of the included items were chosen on the basis of strong empirical support of an association with measures of student success.

The CCSSE results can be used to compute five benchmark scores which help identify areas of institutional strength or weakness. These benchmarks correspond to these five constructs which support student engagement:

- Active and Collaborative Learning
- Student Effort
- Academic Challenge
- Student-Faculty Interaction
- Support for Learners

## ACTIVE AND COLLABORATIVE LEARNING

When students are actively involved in their education and apply what they are learning in diverse settings, they learn more than when they passively receive information from the instructor through lecture. Collaborative learning, where students work in small groups, is a method of

promoting active learning that encourages students to teach and learn from each other.

Seven items on the CCSSE make up the *Active and Collaborative Learning* benchmark which measure the extent to which students are actively involved in their educational processes and collaborate with other learners. The following items are included in the *Active and Collaborative Learning* benchmark:

In your experience at this college during the current school year, about how often have you done each of the following?

1. Asked questions in class or contributed to class discussions (item 4a);
2. Made a class presentation (item 4b);
3. Worked with other students on projects during class (item 4f);
4. Worked with classmates outside of class to prepare class assignments (item 4g);
5. Tutored or taught other students, paid or voluntary (item 4h);
6. Participated in a community –based project as a part of a regular course (item 4i); and,
7. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.) (item 4r).

## STUDENT EFFORT

The second benchmark, *Student Effort*, focuses on the student behaviors which support learning, including time-on-task, activities to master learning, and use of academic support resources.

Eight items on the CCSSE make up the *Student Effort* benchmark which measures the extent to which students apply themselves to the learning processes. The following items are included in the *Student Effort* benchmark:

In your experience at this college during the current school year, about how often have you done each of the following:

1. Prepared two or more drafts of a paper or assignment before turning it in (item 4c);
2. Worked on a paper or project that required integrating ideas or information from various sources (item 4d); and,
3. Come to class without completing readings or assignments (item 4e).

During the current school year, about how much reading and writing have you done at this college?

4. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment (item 6b).

About how many hours do you spend in a typical 7-day week doing each of the following?

5. Preparing for class (studying, reading, writing, rehearsing, doing homework, or other activities related to your program; item 10a).

How often do you use the following services at this college?

6. Peer or other tutoring services (item 13d1);
7. Skills labs (writing, math, etc.; item 13e1); and,
8. Computer lab (item 13h1).

Item 4e (come to class without completing readings or assignments) is reverse coded so that lower score indicate higher frequency of the behavior, and higher scores indicate lower frequency of the behavior.



## ACADEMIC CHALLENGE

Challenging intellectual and creative work is central to student learning and collegiate quality.

Ten survey items on the CCSSE make up the *Academic Challenge* benchmark which measures the nature and amount of assigned academic work that are challenging. The following items are included in the *Academic Challenge* benchmark.

1. In your experience at this college during the current school year, about how often have worked harder than you thought you could to meet an instructor's standards or expectations (item 4p);

During the current school year, how much has your coursework at this college emphasized the following mental activities?

2. Analyzing the basic elements of an idea, experience, or theory (item 5b);
3. Synthesizing and organizing ideas, information, or experiences in new ways (item 5c);
4. Making judgments about the value or soundness of information, arguments, or methods (item 5d);
5. Applying theories or concepts to practical problems or in new situations (item 5e); and,
6. Using information you have read or heard to perform a new skill (item 5f).

During the current school year, about how much reading and writing have you done at this college?

7. Number of assigned textbooks, manuals, books, or book-length packs of course readings (item 6a); and
8. Number of written papers or reports of any length (item 6c).
9. Mark the response that best represents the extent to which your examinations during the current school year have challenged you to do your best work at this college (item 7).
10. How much does this college encourage you to spend significant amounts of time studying (item 9a)?

## STUDENT-FACULTY INTERACTION

Frequent interactions with faculty strengthen students' connections to the college. In general, the more students interact with faculty, both in and out of the classroom, the more likely they are to learn and persist towards their educational goals.

Six items on the CCSSE measure the extent to which students have personal contacts with their instructors, making up the *Student-Faculty Interaction* benchmark. The following items are included in the benchmark:

In your experience at this college during the current school year, about how often have you done each of the following:

1. Used email to communicate with an instructor (item 4k);
2. Discussed grades or assignments with an instructor (item 4l);
3. Talked about career plans with an instructor or advisor (item 4m);
4. Discussed ideas from your readings or classes with instructors outside of class (item 4n);
5. Received prompt feedback (oral and written) from instructors on your performance (item 4o); and,
6. Worked with instructors on activities other than coursework (item 4q).

## SUPPORT FOR LEARNERS

Students are more likely to succeed in college if they perceive the college to be committed to their success and they utilize college resources.

Seven items on the CCSSE form the *Support for Learners* benchmark. These items measure the extent to which students perceive the college provides services and support for their learning and academic success.

How much does this college emphasize each of the following?

1. Providing the support you need to help you succeed at their college (item 9b);
2. Encouraging contact among students from different economic, social, and racial, or ethnic backgrounds (item 9c);
3. Helping you cope with your nonacademic responsibilities (work, family, etc.; item 9d);
4. Providing the support you need to thrive socially (item 9e); and,
5. Providing the financial support you need to afford your education (item 9f).

In your experience at this college during the current school year, about how often have you used the following services?

6. Academic advising/planning services (item 13a1); and,
7. Career counseling services (item 13b1).

## STANDARDIZED BENCHMARK SCORES

Standardized benchmark scores were calculated to compare SMC's performance to other community colleges and answer the first research question, "How well does SMC perform on the CCSSE benchmarks when compared with peer colleges?" Community colleges vary on multiple variables, including size, location, resources, enrollment patterns, and student characteristics. Therefore, standardized benchmark scores are useful when comparing SMC's performance to the performance of other community colleges. Scores for each benchmark are calculated by averaging the scores on survey items that comprise the specific benchmark. The benchmark scores are then standardized so that the mean, or average of all participating students in three years of CCSSE administration (2010 to 2012), is 50 and the standard deviation is 25. Benchmark scores are weighted by full-time and part-time enrollment status. Standardized benchmarks are recalculated each year, and are based on the distribution of responses for the three most recent cohorts of survey participants.

## RAW BENCHMARK SCORES

Standardized benchmark scores are not appropriate when conducting longitudinal trend analyses since standardized benchmark scores are recalculated each year. Therefore, raw benchmark scores are used to develop the baseline measure for future monitoring of benchmark performances.

Benchmark scores are computed by averaging the scores of the related survey items. High scores on survey items indicate positive engagement behavior, with the exception of item 4d of the *Student Effort* benchmark which is reverse coded so that lower scores indicate higher frequency of the behavior.

The scales for the survey items are not equal. For example, some items use a 4-point scale while others use a six-point scale. As a result, all items are converted to a common scale, with a range of 0 to 1. The following formula was used to convert items to a common scale:

$$\text{Converted score} = \frac{(\text{Original score} - 1)}{(\text{Max. response value} - 1)}$$

Individual student benchmark scores are calculated by averaging the converted scores for all items in the benchmark group. College benchmark scores are calculated by averaging the raw individual student benchmark scores.

### EXAMPLE: CALCULATING CONVERTED SCORES

- ▶ **Scale:**  
1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often
- ▶ **Maximum response value:** 4
- ▶ **Student response:** 2
- ▶ **Converted score:**  
 $(2 - 1) / (4 - 1) = 0.33$

Students' raw individual benchmark scores were used to answer the third research question, "What is the impact of student engagement on success outcomes (first-year GPA, course completion, and persistence) for first-time freshmen?"

## WEIGHTED BENCHMARK SCORES

In instances where benchmark scores are compared across groups, weighted average benchmark scores are computed and used. The CCSSE was administered at the classroom level; therefore, full-time students were more likely to be enrolled in a class that was randomly selected for participation in the study than part-time students. To account for the sampling bias, the raw benchmark scores were weighted by the college full-time/part-time makeup of the student population. The weighted benchmark scores were used to answer the second research question, "Do students differ on the CCSSE benchmarks in terms of gender, ethnicity/race, age, unit load, and residence status?" When comparing benchmark scores by students' unit load (full-time versus part-time), un-weighted raw benchmark scores were used.

## INDIVIDUAL ITEM SCORES

In instances where average scores on individual items are compared by student group or compared to other colleges, weighted, unconverted item scores are used.

STANDARDIZED BENCHMARK	RAW/WEIGHTED BENCHMARK	ITEM SCORES
<ul style="list-style-type: none"><li>• Mean: 50</li><li>• Standard deviation: 25</li><li>• 95% of institutions score between 0 and 100</li></ul>	<ul style="list-style-type: none"><li>• Average converted scores for all items in benchmark</li><li>• Range: 0 to 1</li></ul>	<ul style="list-style-type: none"><li>• Average is weighted by full-time/part-time status</li><li>• Range: minimum response value to maximum response value</li></ul>

FOR MORE INFORMATION ON HOW BENCHMARKS ARE CALCULATED,  
VISIT: [WWW.CCSSE.ORG/SURVEY/DOCS/HOW\\_BENCHMARKS\\_ARE\\_CALCULATED.PDF](http://WWW.CCSSE.ORG/SURVEY/DOCS/HOW_BENCHMARKS_ARE_CALCULATED.PDF)

# Benchmark Performance Comparison to Peer Colleges (Research Question 1)

This section compares SMC’s performance on the five CCSSE benchmarks to all community colleges participating in the survey between 2010 and 2012 (referred to as the 2012 CCSSE cohort) and other extra-large colleges. The 2012 CCSSE cohort represents 453,093 students enrolled at 710 colleges in 48 states and the District of Columbia, four Canadian provinces (Alberta, British Columbia, Nova Scotia, and Quebec), Bermuda, and Northern Marianas. Among the 710 colleges, 75, including SMC, were extra-large colleges, enrolling 15,000 or more students annually (referred to as Ex-Large Colleges). The 2012 CCSSE Cohort and Extra-Large Colleges comparison groups include SMC.

Figure 1. Standardized Benchmark Score Comparison: SMC vs. CCSSE Cohort vs. Ex-Large Colleges

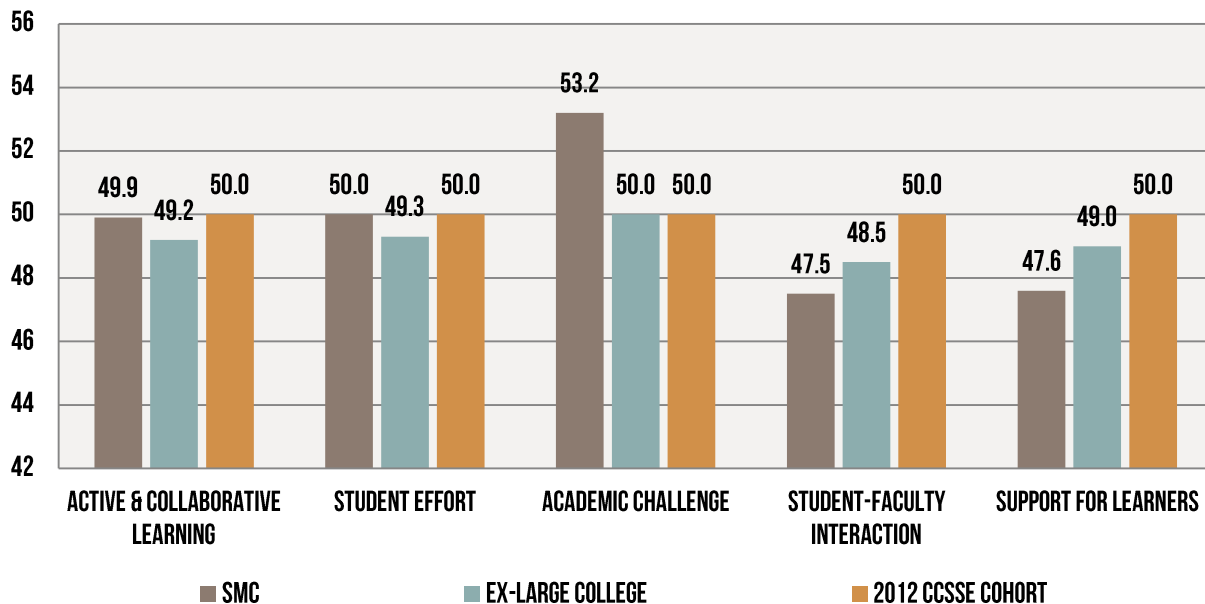


Figure 1 compares the average standardized scores for SMC, the 2012 CCSSE cohort, and extra-large colleges. Because only summary-level data was available about the 2012 CCSSE cohort and extra-large colleges, no statistical testing could be conducted to examine whether any observed differences were beyond what might be expected with chance variation.

The national average on the standardized score for each of the five benchmarks is 50, with a standard deviation of 25. The data reveal that SMC performs close to the national average on each of the five benchmarks. However, SMC performs slightly below the national 2012 CCSSE cohort average for the *Student-Faculty Interaction* and *Support for Learners* benchmarks (2.5 and 2.4 points lower, respectively). The data indicates that when compared with all students who participated in the CCSSE between 2010 and 2012, SMC students reported, on average, making less personal contact with faculty and perceived the college to be less supportive for learners.

SMC performed similarly to the 2012 CCSSE cohort average for *Active and Collaborative Learning* and *Student Effort* benchmarks (differences of 0.1 and 0, respectively). SMC performed better than the national average on the *Academic Challenge* benchmark (3.2 points higher), which reveals that SMC students report that the academic coursework assigned to them is more challenging and rigorous when compared to the national average.

When compared with other extra-large colleges, SMC slightly outperforms on three of the five benchmarks: *Active and Collaborative Learning* (0.7 points higher), *Student Effort* (0.7 points higher), and *Academic Challenge* (3.2 points higher). The average Ex-Large Colleges group performances on the *Student-Faculty Interaction* and *Support for Learners* benchmarks are higher than the SMC performances on the same benchmarks (1.0 and 1.4 points higher, respectively).

An item analysis of mean scores for each benchmark reveals that SMC students statistically differ on two items when compared to students enrolled in other extra-large colleges and/or students in the 2012 CCSSE cohort:

*Active and Collaborative Learning* benchmark item:

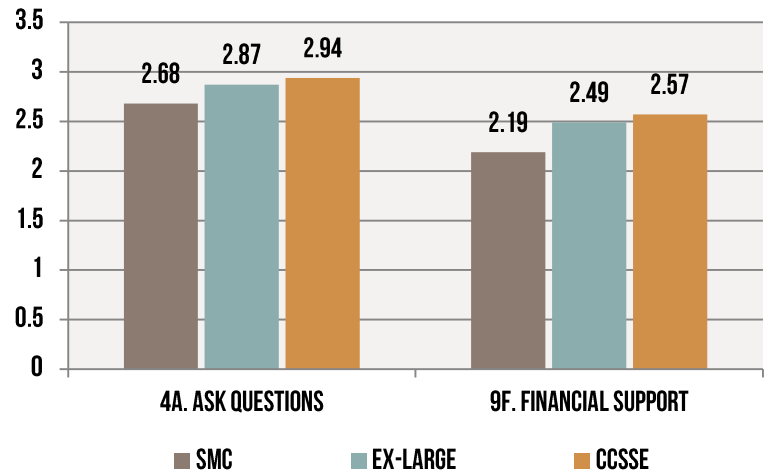
4a. Asked questions in class or contributed to class discussions (1 = Never, 2= Sometimes, 3=Often, 4=Very often)

*Support for Learners* benchmark item:

9f. [The college provides] the financial support you need to afford your education (1 = Very little, 2 = Some, 3 = Quite a bit, 4 = Very much)

Figure 2 describes the weighted mean scores for the two items. The average item scores for the comparison groups exclude SMC students.

Figure 2. Weighted Mean Score Comparison for Items 4a and 9f



On average, SMC students reported they asked questions in class or contributed to class discussion more frequently than “sometimes” and perceived the college to provide a little more than “some” of the financial support they need.

On average, SMC students reported that they asked questions in class or contributed to class discussion significantly less often and perceived the college to provide less financial support when compared to students enrolled in other extra-large colleges and students enrolled in all other community colleges participating in CCSSE<sup>1</sup>. The large proportion of international students in the SMC CCSSE sample may negatively impact the average score for item 9f (financial support) as international students are not eligible for federal financial aid.

<sup>1</sup> T-test,  $p < .05$

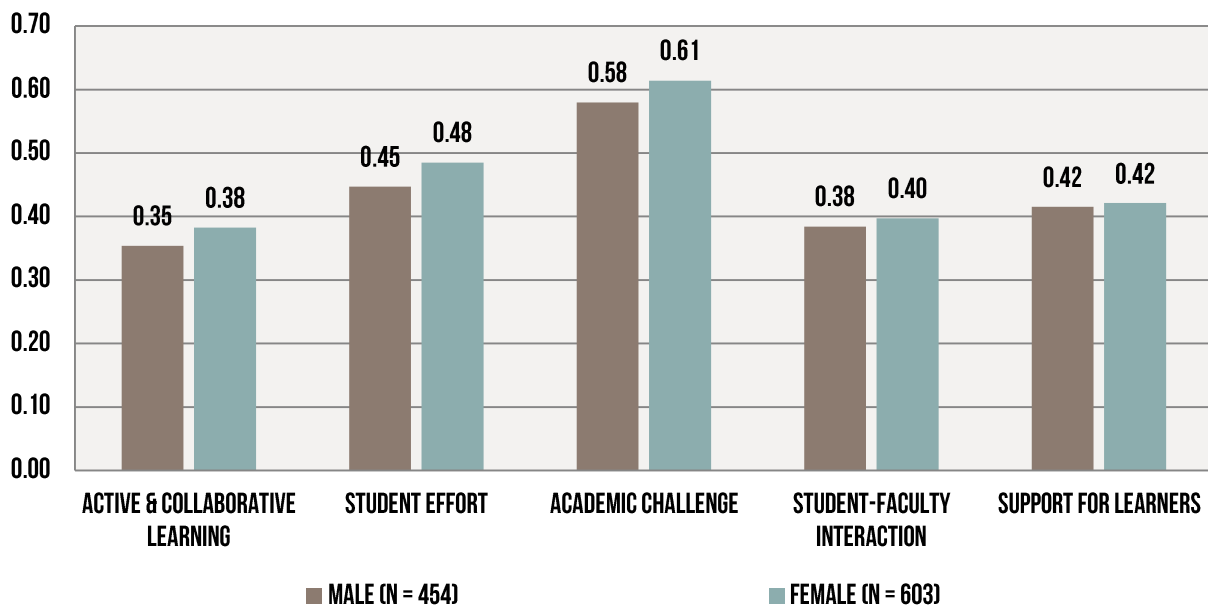
# Benchmark Performance by Student Subgroups (Research Question 2)

The following section provides an analysis of average benchmark scores by student gender, ethnicity/race, age group, unit load, and residence status for the SMC CCSSE sample. In events where significant difference in average benchmark scores were found between student ethnicity/race and international student status subgroups, a more detailed item analysis was conducted to evaluate whether student subgroups differed on the benchmark items.

## BENCHMARK PERFORMANCE BY STUDENT GENDER

Independent-sample t-tests were conducted to determine whether there are significant differences in average CCSSE benchmark scores between male and female SMC students. Figure 3 describes the average weighted benchmark scores by student gender.

Figure 3. Average Weighted Benchmark Scores by Student Gender



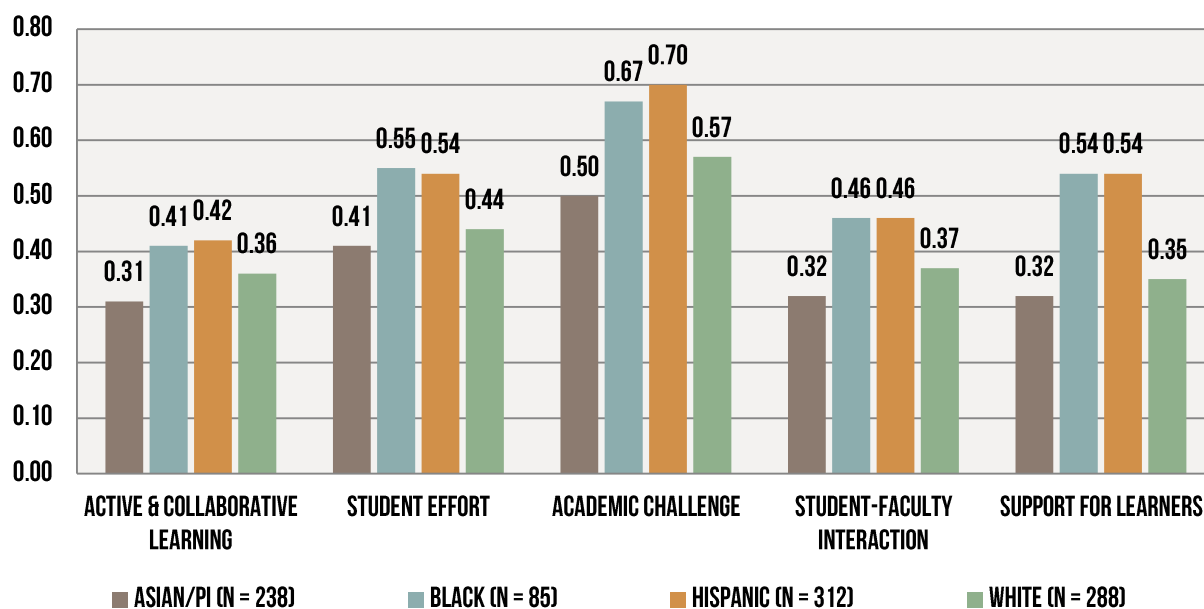
The t-test analyses reveal SMC students do not significantly differ on any of the benchmark scores by student gender<sup>2</sup>.

<sup>2</sup> ACT COLL:  $t(1055) = 1.632, p = .103$   
 STU EFF:  $t(1055) = 1.868, p = 0.62$   
 ACAD CHALL:  $t(1055) = 1.368, p = .172$   
 STU FAC:  $t(1055) = .679, p = .497$   
 SUPPORT:  $t(1053) = .270, p = .787$

## BENCHMARK PERFORMANCE BY STUDENT ETHNICITY/RACE

One-way ANOVAs were conducted to test for differences in average benchmark scores among four different student ethnicity/race groups (Asian/Pacific Islander, Black, Hispanic, and White). Figure 4 describes the average weighted benchmark scores by student ethnicity/race. Students in the “Other” and “American Indian or Other Native American” ethnicity/race categories were excluded from the analyses due to the small group sample sizes.

Figure 4. Average Weighted Benchmark Scores by Student Ethnicity/Race



The one-way ANOVA analyses reveal that average weighted benchmark scores significantly differed by student ethnicity/race groups<sup>3</sup> for all five benchmarks. Post hoc tests reveal the following:

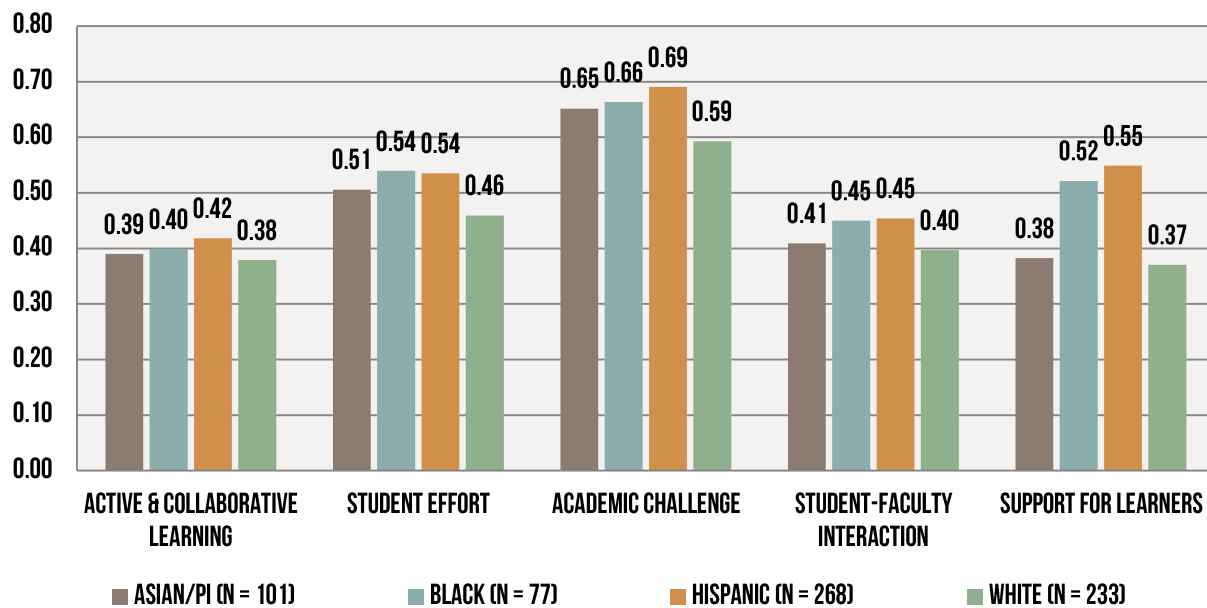
- Asian/Pacific Islander students had significantly lower scores than both the Black and Hispanic students on all five of the CCSSE benchmarks;
- White students had significantly lower scores than Hispanic students on four of the five CCSSE benchmarks (*Student Effort*, *Academic Challenge*, *Student-Faculty Interaction*, and *Support for Learners*); and,
- White students had significantly lower scores than Black students on the *Support for Learners* benchmark.

<sup>3</sup> ACT COLL:  $F(3, 919) = 6.954, p < .001$   
 STU EFF:  $F(3, 919) = 9.549, p < .001$   
 ACAD CHALL:  $F(3, 919) = 12.001, p < .001$   
 STU FAC:  $F(3, 919) = 9.953, p < .001$   
 SUPPORT:  $F(3, 917) = 26.250, p < .001$



The overrepresentation of international students in the CCSSE sample may impact the average benchmark scores for the different ethnicity/race student groups as international students at SMC are predominately Asian or White (over 65% Asian and over 15% White). Therefore, one-way ANOVA analyses were repeated to assess whether excluding the international students from the analyses would produce different results (see Figure 5).

Figure 5. Average Weighted Benchmark Scores by Student Ethnicity/Race, Domestic Student Only



When excluding international students from the analyses, the average difference in weighted benchmark scores between student ethnicity/race groups disappeared for the *Active and Collaborative Learning*, *Student Effort*, *Academic Challenge*, and *Student-Faculty Interaction* benchmarks<sup>4</sup>. Average weighted benchmark scores for *Support for Learners* differed significantly by student ethnicity/race group:

- Asian/Pacific Islander students ( $M = 0.38$ ;  $SD = 0.31$ ) had significantly lower scores than Hispanic students ( $M = 0.55$ ;  $SD = 0.44$ ); and,
- White students ( $M = 0.37$ ;  $SD = 0.30$ ) had significantly lower scores than both Black ( $M = 0.52$ ;  $SD = 0.40$ ) and Hispanic ( $M = 0.55$ ;  $SD = 0.44$ ) students.
- White students had significantly lower scores than Black students on the *Support for Learners* benchmark.

<sup>4</sup> ACT COLL:  $F(3, 675) = .725, p = .535$   
 STU EFF:  $F(3, 675) = 2.440, p = .063$   
 ACAD CHALL:  $F(3, 675) = 2.323, p = .074$   
 STU FAC:  $F(3, 675) = 1.527, p = .206$   
 SUPPORT:  $F(3, 673) = 11.769, p < .001$

An item analysis comparing the average score for non-international students found that item scores differed significantly by student ethnicity/race group for all seven items on the *Support for Learners* benchmark (see Table 6).

Table 6. Average Weighted Item Scores on the *Support for Learners* Benchmark by Student Ethnicity/Race<sup>5</sup>

ITEM	ASIAN/PACIFIC ISLANDER	BLACK	HISPANIC	WHITE	STATISTICALLY SIGNIFICANT DIFFERENCE FOUND
<b>HOW MUCH DOES THIS COLLEGE EMPHASIZE EACH OF THE FOLLOWING? ITEM SCALE : 1 = VERY LITTLE, 2 = SOME, 3 = QUITE A BIT, 4 = VERY MUCH</b>					
9b. Providing the support you need to help you succeed at this college.	2.79 (n = 99)	3.40 (n = 76)	3.45 (n = 264)	2.89 (n = 229)	Asian/White< Hispanic
9c. Encouraging contact among students from different economic, social, and racial or ethnic background.	2.70 (n = 101)	3.15 (n = 77)	3.27 (n = 265)	2.77 (n = 229)	Asian/White< Hispanic
9d. Helping you cope with your non-academic responsibilities (work, family, etc.)	1.69 (n = 98)	2.24 (n = 77)	3.27 (n = 265)	2.77 (n = 229)	Asian/White< Hispanic
9e. Providing the support you need to thrive socially.	2.03 (n = 99)	2.49 (n = 74)	2.63 (n = 263)	2.00 (n = 228)	Asian/White< Hispanic
9f. Providing the financial support you need to afford your education.	2.29 (n = 97)	2.60 (n = 75)	2.90 (n = 264)	2.04 (n = 226)	Asian/White< Hispanic
<b>HOW OFTEN DO YOU USE THE FOLLOWING SERVICES AT THIS COLLEGE? ITEM SCALE : 1 = RARELY/NEVER, 2 = SOMETIMES, 3 = OFTEN</b>					
13a1. Academic advising/planning	1.70 (n = 98)	1.96 (n = 71)	1.82 (n = 262)	1.38 (n = 227)	White< Black/ Hispanic
13b1. Career counseling	1.18 (n = 96)	1.60 (n = 70)	1.59 (n = 258)	1.04 (n = 225)	Asian< Hispanic White< Black/Hispanic

Black students, on average, reported higher engagement levels on the *Support for Learners* benchmark items than Asian and White students, however, post hoc tests reveal that the differences are not statistically significant (with the exception of item 13b1 for comparison to White students) which may be due to the small number of Black students in the sample. Post hoc tests reveal that, on average, Asian and White students reported that the college emphasized providing support for success (item 9b), encouraging contact among diverse students (item 9c), helping cope with non-academic responsibilities (item 9d),

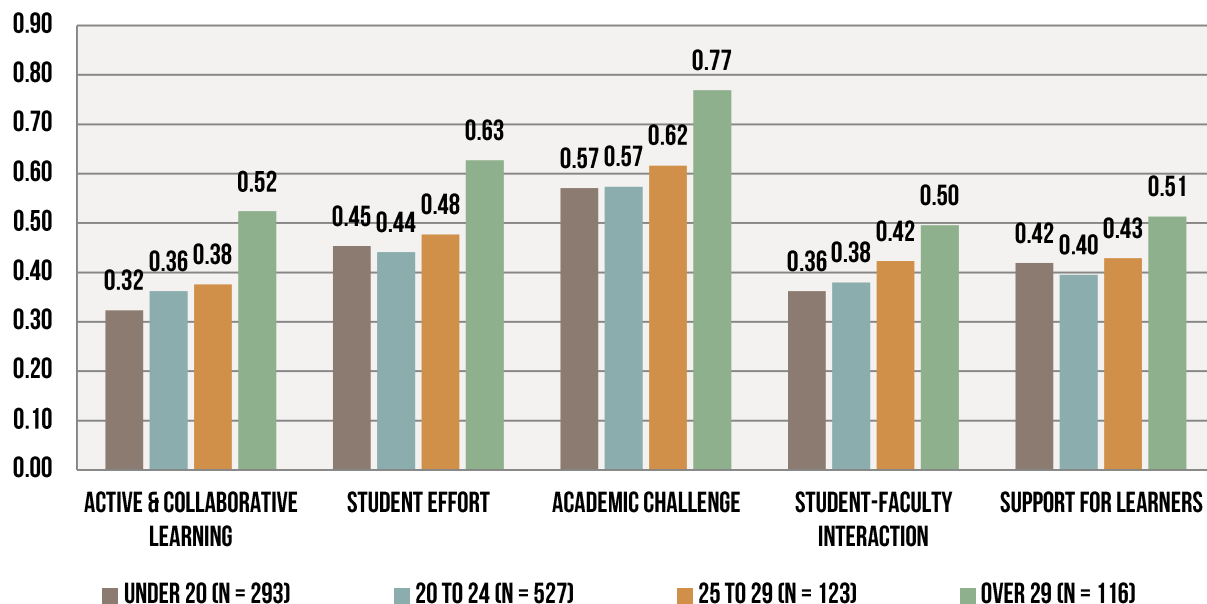
<sup>5</sup> Item 9b:  $F(3, 664) = 4.177, p < .05$   
 Item 9c:  $F(3, 668) = 3.028, p < .05$   
 Item 9d:  $F(3, 666) = 8.723, p < .001$   
 Item 9e:  $F(3, 660) = 6.137, p < .001$   
 Item 9f:  $F(3, 658) = 8.658, p < .001$   
 Item 13a1:  $F(3, 654) = 5.440, p < .01$   
 Item 13b1:  $F(3, 645) = 9.755, p < .001$

providing social support (item 9e), and providing financial support for education (item 9f) to a lesser degree than Hispanic students. There is no difference between Asian and White students on these items. While the White students reported using academic advising/planning (item 13a1) and career counseling (item 13b1) services less often, on average, than both Hispanic and Black students. Asian students reported using career counseling services less frequently than Hispanic students.

## BENCHMARK PERFORMANCE BY STUDENT AGE GROUP

One-way ANOVAs were conducted to test for differences in average benchmark scores among four different student age groups (Under 20, 20 to 24, 25 to 29, and Over 29). Figure 7 describes the average weighted benchmark scores by student age group.

Figure 7. Average Weighted Benchmark Scores by Student Age Group



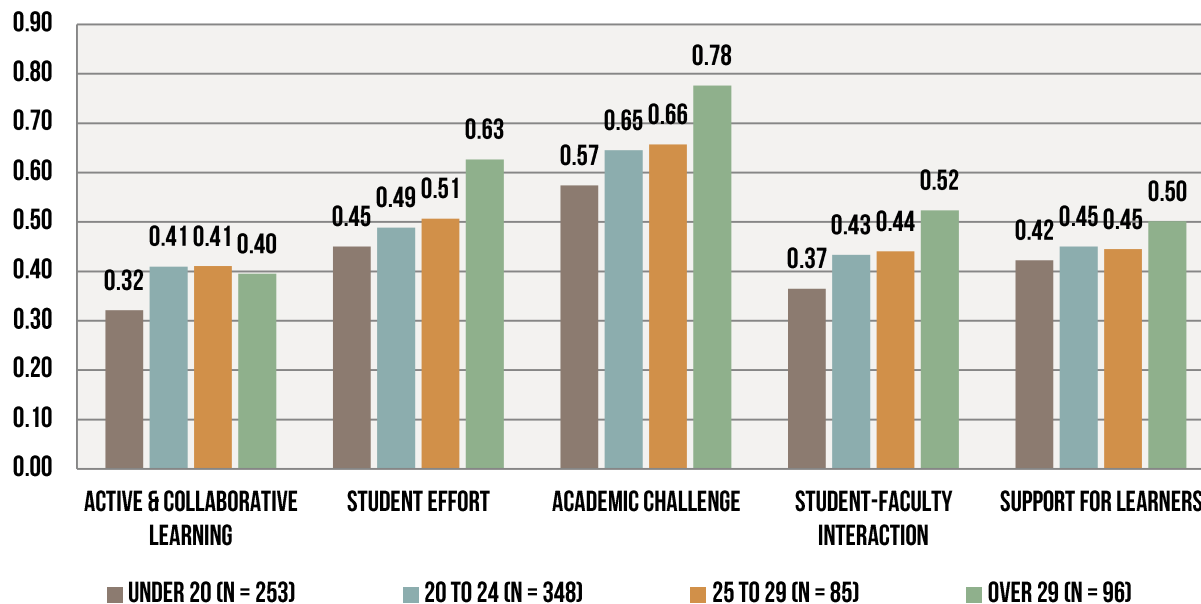
The one-way ANOVA analyses reveal that average weighted benchmark scores significantly differed by student age groups<sup>6</sup> for all five benchmarks. Post hoc tests reveal that older students (over the age of 29) had higher average benchmark scores for all five benchmarks when compared with the younger students (Under 20, 20 to 24, and 25 to 29). No difference in average benchmark score was observed among the three younger age groups.

The overrepresentation of international students in the CCSSE sample may impact the average benchmark scores for the different age student groups as international students at SMC are significantly younger

<sup>6</sup> ACT COLL:  $F(3, 1055) = 14.609, p < .001$   
 STU EFF:  $F(3, 1055) = 11.014, p < .001$   
 ACAD CHALL:  $F(3, 1055) = 8.253, p < .001$   
 STU FAC:  $F(3, 1055) = 5.993, p < .001$   
 SUPPORT:  $F(3, 1053) = 3.338, p < .05$

(average 22.3 years of age) when compared to domestic students (average 24.8 years of age). Therefore, one-way ANOVA analyses were repeated to assess whether excluding the international students from the analyses would produce different results (see Figure 8).

Figure 8. Average Weighted Benchmark Scores by Student Age Group, Domestic Student Only



When excluding international students from the analyses, the average difference in weighted benchmark scores between student groups was found for the *Active and Collaborative Learning*, *Student Effort*, *Academic Challenge*, and *Student-Faculty Interaction* benchmarks<sup>7</sup>. Average weighted benchmark scores for *Support for Learners* did not significantly differ by student age group. Post hoc analyses revealed the following:

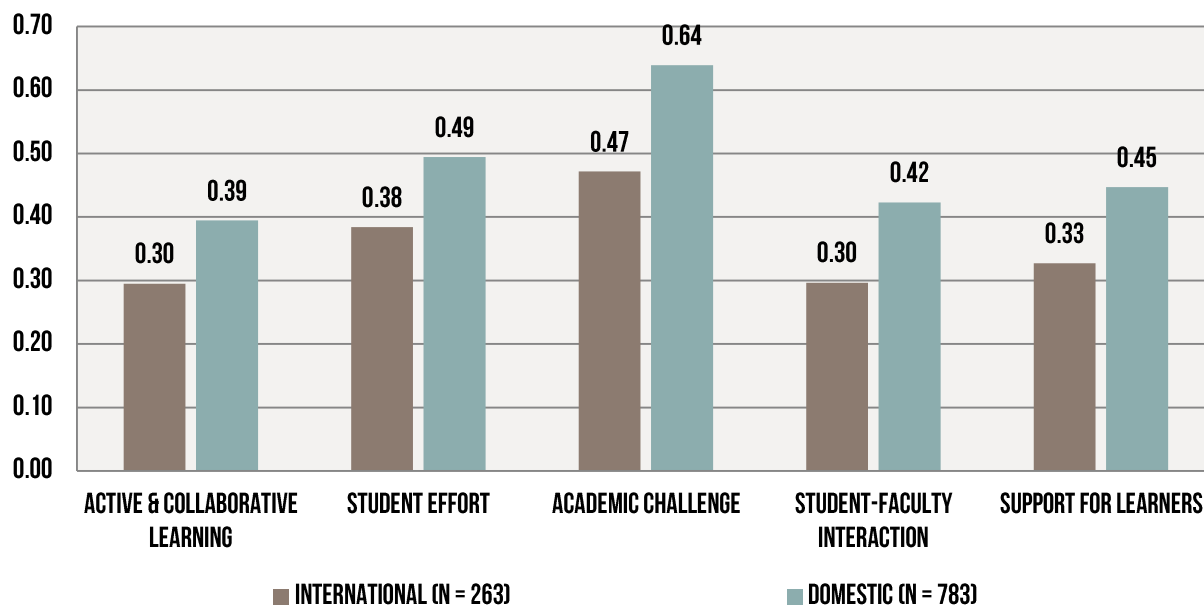
- The youngest groups of students (Under 20 and 20 to 24) scored significantly lower on the *Active and Collaborative Learning* and *Student Effort* benchmarks when compared to the oldest student group (Over 29);
- Students under the age of 20 had lower *Active and Collaborative Learning* and *Student-Faculty Interaction* benchmark scores when compared to students between the ages of 20 and 24; and,
- The youngest students (Under 20) scored significantly lower on the *Academic Challenge* and *Student-Faculty Interaction* scores when compared to the oldest students (Over 29).

<sup>7</sup> ACT COLL:  $F(3, 778) = 11.998, p < .001$   
 STU EFF:  $F(3, 778) = 6.777, p < .001$   
 ACAD CHALL:  $F(3, 778) = 5.733, p < .001$   
 STU FAC:  $F(3, 778) = 6.335, p < .001$   
 SUPPORT:  $F(3, 776) = 1.039, p = .375$

## BENCHMARK PERFORMANCE BY INTERNATIONAL STUDENT STATUS

Independent-sample t-tests were conducted to test for differences in average benchmark scores by international student status. Figure 9 describes the average weighted benchmark scores by international student status.

Figure 9. Average Weighted Benchmark Scores by International Student Status



The t-test analyses reveal that SMC students significantly differ on all five of the benchmarks scores by international student status<sup>8</sup>. International students had lower average weighted scores on all the CCSSE benchmarks when compared to domestic students. The data indicate that international students are less engaged than domestic students in terms of the CCSSE benchmarks.

An item analysis revealed that international students have significantly lower average scores on every item in the five CCSSE benchmarks when compared to domestic students. Tables 10 to 14 reports the item-by-item weighted average scores for international and domestic students, the mean difference in score between the two groups, and the calculated effect sizes (magnitude of the difference).

Among all of the items of five benchmarks, item 9f (students' perception of college providing financial support to afford education) yielded the largest effect size ( $r = 0.31$ ) which suggests international and domestic students differ the most in terms of their average scores on this item. Among all of the items of the five benchmarks, items 13d1 (use of peer or other tutoring) and 13e1 (use of skills labs) yielded the

<sup>8</sup> ACT COLL:  $t(568.29) = 5.609, p < .001$   
 STU EFF:  $t(544.19) = 5.376, p < .001$   
 ACAD CHALL:  $t(554.73) = 6.589, p < .001$   
 STU FAC:  $t(560.54) = 6.540, p < .001$   
 SUPPORT:  $t(571.05) = 5.298, p < .001$

smallest effect size (both  $r = 0.10$ ) which suggests that while significance testing found that international students reported using tutoring and skills labs less frequently, on average, than domestic students, the difference is small.

*Table 10. Average Weighted Item Scores on the Active and Collaborative Learning Benchmark by International Student Status<sup>9</sup>*

ITEM	INTERNATIONAL	DOMESTIC	DIFFERENCE (INTERNATIONAL – DOMESTIC)	EFFECT SIZE (R)
IN YOUR EXPERIENCE AT THE COLLEGE DURING THE CURRENT SCHOOL YEAR, ABOUT HOW OFTEN HAVE YOU DONE EACH OF THE FOLLOWING? SCALE: 1 = NEVER, 2 = SOMETIMES, 3 = OFTEN, 4 = VERY OFTEN				
4a. Asked questions in class or contributed to class discussions	1.99 (n = 263)	2.91 (n = 782)	-0.92	0.27
4b. Made a class presentation	1.69 (n = 263)	2.19 (n = 778)	-0.50	0.17
4f. Worked with other students on projects during class	2.07 (n = 260)	2.71 (n = 775)	-0.63	0.18
4g. Worked with classmates outside of class to prepare class assignments	1.64 (n = 260)	2.20 (n = 777)	-0.56	0.20
4h. Tutored or taught other students (paid or voluntary)	1.24 (n = 262)	1.49 (n = 781)	-0.25	0.12
4i. Participated in a community-based project as a part of a regular course	1.18 (n = 260)	1.42 (n = 777)	-0.24	0.12
4r. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	2.00 (n = 262)	2.83 (n = 781)	-0.83	0.24

<sup>9</sup> Item 4a:  $t(586.50) = 7.991, p < .001$   
 Item 4b:  $t(558.32) = 4.972, p < .001$   
 Item 4f:  $t(553.72) = 5.229, p < .001$   
 Item 4g:  $t(588.33) = 5.720, p < .001$   
 Item 4h:  $t(507.79) = 3.325, p < .01$   
 Item 4i:  $t(547.58) = 3.433, p < .01$   
 Item 4r:  $t(552.50) = 6.950, p < .001$

Table 11. Average Weighted Item Scores on the Student Effort Benchmark by International Student Status<sup>10</sup>

ITEM	INTERNATIONAL	DOMESTIC	DIFFERENCE (INTERNATIONAL – DOMESTIC)	EFFECT SIZE (R)
<b>IN YOUR EXPERIENCE AT THE COLLEGE DURING THE CURRENT SCHOOL YEAR, ABOUT HOW OFTEN HAVE YOU DONE EACH OF THE FOLLOWING? SCALE: 1 = NEVER, 2 = SOMETIMES, 3 = OFTEN, 4 = VERY OFTEN</b>				
4c. Prepared two or more drafts of a paper or assignment before turning it in	1.97 (n = 260)	2.66 (n = 778)	-0.69	0.21
4d. Worked on a paper or project that required integrating ideas or information from various sources	2.11 (n = 261)	2.92 (n = 776)	-0.81	0.24
4e. Came to class without completing readings or assignments	1.48 (n = 262)	2.00 (n = 774)	-0.52	0.21
<b>DURING THE CURRENT SCHOOL YEAR, ABOUT HOW MUCH READING AND WRITING HAVE YOU DONE AT THIS COLLEGE? SCALE: 1 = NONE, 2 = BETWEEN 1 AND 4, 3 = BETWEEN 5 AND 10, 4 = BETWEEN 11 AND 20, 5 = MORE THAN 20</b>				
6b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment	1.74 (n = 261)	2.27 (n = 782)	-0.53	0.18
<b>ABOUT HOW MANY HOURS DO YOU SPEND IN A TYPICAL 7-DAY WEEK DOING EACH OF THE FOLLOWING? SCALE: 0 = NONE, 1 = 1.5 HOURS, 2 = 6-10 HOURS, 3 = 11-20 HOURS, 4 = 21-30 HOURS, 5 = MORE THAN 30 HOURS</b>				
10a. Preparing for class (studying, reading, writing, rehearsing, doing homework, or other activities related to your program)	1.89 (n = 263)	2.27 (n = 780)	-0.38	0.13
<b>HOW OFTEN DO YOU USE THE FOLLOWING SERVICES AT THIS COLLEGE? SCALE: 1 = RARELY/NEVER, 2 = SOMETIMES, 3 = OFTEN</b>				
13d1. Peer or other tutoring	1.01 (n = 255)	1.22 (n = 737)	-0.21	0.10
13e1. Skills labs (writing, math, etc.)	1.28 (n = 256)	1.54 (n = 735)	-0.26	0.10
13h1. Computer lab	1.51 (n = 256)	1.87 (n = 740)	-0.36	0.11

<sup>10</sup> Item 4c:  $t(576.42) = 5.929, p < .001$   
 Item 4d:  $t(575.95) = 6.828, p < .001$   
 Item 4e:  $t(553.83) = 5.899, p < .001$   
 Item 6b:  $t(584.23) = 5.108, p < .001$   
 Item 10a:  $t(543.66) = 3.580, p < .001$   
 Item 13d1:  $t(528.92) = 2.655, p < .01$   
 Item 13e1:  $t(561.63) = 2.793, p < .01$   
 Item 13h1:  $t(528.70) = 3.096, p < .01$

Table 12. Average Weighted Item Scores on the Academic Challenge Benchmark by International Student Status<sup>11</sup>

ITEM	INTERNATIONAL	DOMESTIC	DIFFERENCE (INTERNATIONAL – DOMESTIC)	EFFECT SIZE (R)
<b>IN YOUR EXPERIENCE AT THE COLLEGE DURING THE CURRENT SCHOOL YEAR, ABOUT HOW OFTEN HAVE YOU DONE EACH OF THE FOLLOWING? SCALE: 1 = NEVER, 2 = SOMETIMES, 3 = OFTEN, 4 = VERY OFTEN</b>				
4p. Worked harder than you thought you could to meet an instructor's standards of expectations	2.01 (n = 262)	2.83 (n = 777)	-0.82	0.24
<b>DURING THE CURRENT SCHOOL YEAR, HOW MUCH HAS YOUR COURSEWORK AT THIS COLLEGE EMPHASIZED THE FOLLOWING MENTAL ACTIVITIES? SCALE: 1 = VERY LITTLE, 2 = SOME, 3 = QUITE A BIT, 4 = VERY MUCH</b>				
5b. Analyzing the basic elements of an idea, experience, or theory	2.35 (n = 262)	3.28 (n = 780)	-0.93	0.25
5c. Synthesizing and organizing ideas, information, or experiences in new ways	2.25 (n = 262)	3.06 (n = 775)	-0.81	0.22
5d. Making judgments about the value or soundness of information, arguments, or methods	2.02 (n = 261)	2.81 (n = 780)	-0.79	0.23
5e. Applying theories or concepts to practical problems or in new solutions	2.04 (n = 259)	2.94 (n = 780)	-0.90	0.26
5f. Using information you have read or heard to perform a new skill	2.28 (n = 263)	3.10 (n = 780)	-0.82	0.22
<b>DURING THE CURRENT SCHOOL YEAR, ABOUT HOW MUCH READING AND WRITING HAVE YOU DONE AT THIS COLLEGE? SCALE: 1 = NONE, 2 = BETWEEN 1 AND 4, 3 = BETWEEN 5 AND 10, 4 = BETWEEN 11 AND 20, 5 = MORE THAN 20</b>				
6a. Number of assigned textbooks, manuals, books, or book-length packs of course readings	2.49 (n = 263)	3.15 (n = 779)	-0.66	0.18
6c. Number of written papers or reports of any length	2.64 (n = 263)	3.10 (n = 782)	-0.46	0.12
<b>SCALE: 1 = EXTREMELY EASY... 7 = EXTREMELY CHALLENGING</b>				
7. Mark the response that best represents the extent to which your examinations during the current school year have challenged you to do your best work at this college	4.14 (n = 250)	5.44 (n = 761)	-1.30	0.21
<b>HOW MUCH DOES THE COLLEGE EMPHASIZE EACH OF THE FOLLOWING? SCALE: 1 = VERY LITTLE, 2 = SOME, 3 = QUITE A BIT, 4 = VERY MUCH</b>				
9a. Encouraging you to spend significant amounts of time studying	2.55 (n = 263)	3.34 (n = 778)	-0.79	0.20

<sup>11</sup> Item 4p:  $t(554.42) = 6.861, p < .001$   
Item 5b:  $t(564.486) = 7.144, p < .001$   
Item 5c:  $t(560.18) = 6.341, p < .001$   
Item 5d:  $t(560.30) = 6.579, p < .001$   
Item 5e:  $t(577.29) = 7.438, p < .001$   
Item 5f:  $t(545.31) = 6.204, p < .001$   
Item 6a:  $t(513.58) = 5.001, p < .001$   
Item 6c:  $t(495.43) = 3.340, p < .01$   
Item 7:  $t(521.71) = 5.880, p < .001$   
Item 9a:  $t(507.63) = 5.576, p < .001$



Table 13. Average Weighted Item Scores on the Student-Faculty Interaction Benchmark by International Student Status<sup>12</sup>

ITEM	INTERNATIONAL	DOMESTIC	DIFFERENCE (INTERNATIONAL – DOMESTIC)	EFFECT SIZE (R)
IN YOUR EXPERIENCE AT THE COLLEGE DURING THE CURRENT SCHOOL YEAR, ABOUT HOW OFTEN HAVE YOU DONE EACH OF THE FOLLOWING? SCALE: 1 = NEVER, 2 = SOMETIMES, 3 = OFTEN, 4 = VERY OFTEN				
4k. Used email to communicate with an instructor	2.31 (n = 258)	3.04 (n = 776)	-0.73	0.20
4l. Discussed grades or assignments with an instructor	1.82 (n = 261)	2.66 (n = 776)	-0.84	0.26
4m. Talked about career plan with an instructor or advisor	1.51 (n = 260)	2.13 (n = 779)	-0.62	0.22
4n. Discussed ideas from your readings or classes with instructors outside of class	1.41 (n = 262)	1.83 (n = 775)	-0.42	0.17
4o. Received prompt feedback (written or oral) from instructors on your performance	1.87 (n = 260)	2.84 (n = 777)	-0.96	0.30
4q. Worked with instructors on activities other than coursework	1.22 (n = 259)	1.49 (n = 769)	-0.27	0.11

<sup>12</sup> Item 4k:  $t(546.63) = 5.798, p < .001$   
 Item 4l:  $t(556.68) = 7.523, p < .001$   
 Item 4m:  $t(550.93) = 6.375, p < .001$   
 Item 4n:  $t(529.00) = 4.857, p < .001$   
 Item 4o:  $t(638.00) = 8.767, p < .001$   
 Item 4q:  $t(1026) = 3.152, p < .001$

Table 14. Average Weighted Item Scores on the Support for Learners Benchmark by International Student Status<sup>13</sup>

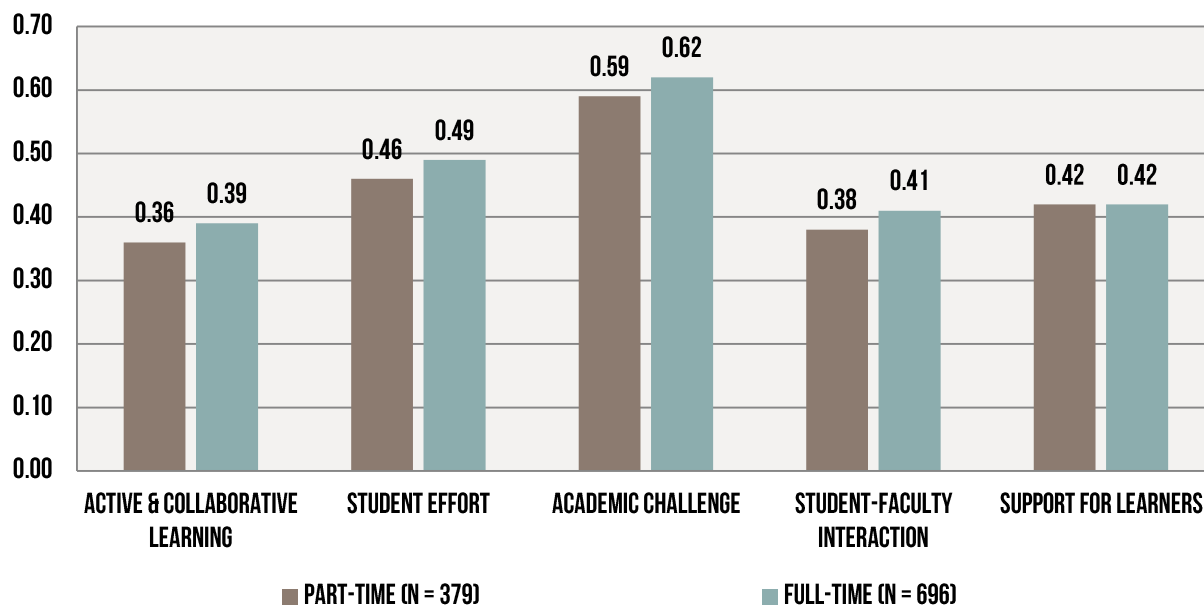
ITEM	INTERNATIONAL	DOMESTIC	DIFFERENCE (INTERNATIONAL – DOMESTIC)	EFFECT SIZE (R)
<b>HOW MUCH DOES THE COLLEGE EMPHASIZE EACH OF THE FOLLOWING? SCALE: 1 = VERY LITTLE, 2 = SOME, 3 = QUITE A BIT, 4 = VERY MUCH</b>				
9b. Providing the support you need to help you succeed at this college	2.26 (n = 263)	3.10 (n = 770)	-0.84	0.22
9c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	2.11 (n = 262)	2.93 (n = 770)	-0.82	0.22
9d. Helping you cope with your non-academic responsibilities (work, family, etc.)	1.60 (n = 262)	1.99 (n = 772)	-0.39	0.13
9e. Providing the support you need to thrive socially	1.77 (n = 259)	2.24 (n = 764)	-0.47	0.15
9f. Providing the financial support you need to afford your education	1.43 (n = 260)	2.43 (n = 763)	-1.00	0.31
<b>HOW OFTEN DO YOU USE THE FOLLOWING SERVICES AT THIS COLLEGE? SCALE: 1 = RARELY/NEVER, 2 = SOMETIMES, 3 = OFTEN</b>				
13a1. Academic advising/planning	1.30 (n = 260)	1.63 (n = 756)	-0.33	0.14
13b1. Career counseling	1.04 (n = 260)	1.31 (n = 746)	-0.27	0.13

<sup>13</sup> Item 9b:  $t(544.37) = 6.391, p < .001$   
 Item 9c:  $t(560.14) = 6.298, p < .001$   
 Item 9d:  $t(515.56) = 3.588, p < .001$   
 Item 9e:  $t(522.54) = 4.107, p < .001$   
 Item 9f:  $t(638.45) = 9.213, p < .001$   
 Item 13a1:  $t(556.12) = 3.923, p < .001$   
 Item 13b1:  $t(523.69) = 3.377, p < .01$

## BENCHMARK PERFORMANCE BY UNIT LOAD

Independent sample t-tests were conducted to test for differences in average benchmark scores by students' unit load status (full-time vs. part-time). Full-time status was defined as 12 or more units enrolled. Figure 15 describes the average raw benchmark scores by student unit load status.

Figure 15. Average Raw Benchmark Scores by Student Unit Load Status

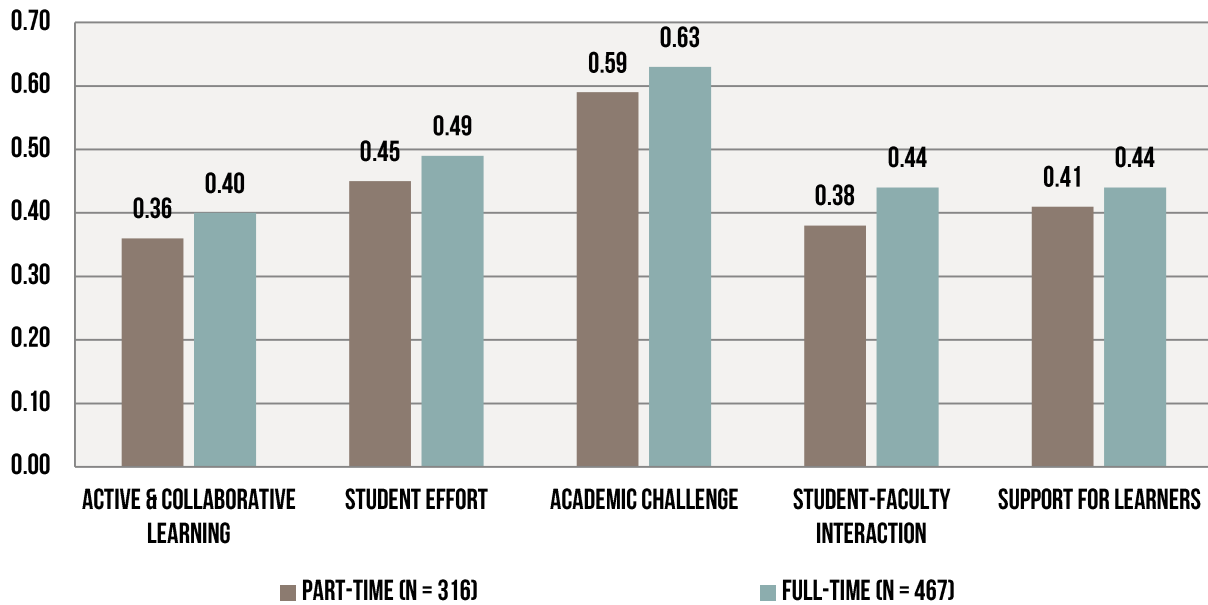


The t-test analyses reveal that average raw benchmark scores significantly differed by unit load status<sup>14</sup> on all of the benchmarks with the exception of the *Support for Learners* benchmark. On average, part-time students had lower *Active & Collaborative Learning*, *Student Effort*, *Academic Challenge*, and *Student-Faculty Interaction* benchmark scores than full-time students. The data indicate that part-time students are less engaged than full-time students in terms of the four CCSSE benchmarks.

The overrepresentation of international students in the CCSSE sample may impact the average benchmark scores by unit load as a large majority of international students maintain a full-time enrollment status. International students must be enrolled in classes full-time in order to maintain their visa status. As a result, t-test analyses were repeated to assess whether excluding the international students from the analyses would produce different results (see Figure 16).

<sup>14</sup> ACT COLL:  $t(1073) = 3.562, p < .001$   
 STU EFF:  $t(1073) = 3.446, p < .01$   
 ACAD CHALL:  $t(1071) = 2.511, p < .05$   
 STU FAC:  $t(1072) = 2.861, p < .01$   
 SUPPORT:  $t(1068) = .357, p = .721$

Figure 16. Average Raw Benchmark Scores by Student Unit Load Status, Domestic Student Only



Excluding international students from the analyses yielded similar results: there are significant differences in average scores between part- and full-time students for the *Active and Collaborative Learning*, *Student Effort*, *Academic Challenge*, and *Student-Faculty Interaction* benchmarks, but not for the *Support for Learners* benchmark.

# The Impact of CCSSE Benchmarks on Student Outcomes (Research Question 3)

In order to answer the third research question “What is the impact of student engagement on educational outcomes for first-time freshmen?” a hierarchical multivariate regression was used to estimate the impact of student engagement on first-year GPA and persistence. Students’ background characteristics may confound the impact of student engagement on student success. Therefore the effects of student variables, including gender, ethnicity/race, age, unit load status, international student status, first-generation college status, low-income status, and basic skills status, on the outcome measures were removed in the analyses. In

addition, the analyses focused solely on first-time freshmen in the 2011-2012 academic year to account for the variability of collegiate experience of transfer, continuing, or returning students.

Among the 1,076 students in the original CCSSE sample, about half (n = 526) reported valid student identifier information. Valid student identification numbers are needed in order to calculate the first-year GPA and persistence of students in the CCSSE sample. Among those with valid identification numbers, 178 were first-time freshmen in 2011-2012 and were included in the sample.

STUDENT CHARACTERISTIC (COVARIATES)	PREDICTORS	OUTCOME
<ul style="list-style-type: none"> <li>• Gender</li> <li>• Ethnicity/Race</li> <li>• Age</li> <li>• Intern'l status</li> <li>• Unit load</li> <li>• First-gen college</li> <li>• Low-income</li> <li>• Basic skills</li> </ul>	<ul style="list-style-type: none"> <li>• Weighted scores on the 5 CCSSE benchmarks</li> </ul>	<ul style="list-style-type: none"> <li>• Cumulative GPA for the 2011-2012 year</li> <li>• Persisted to subsequent fall semester (spring-to-fall)</li> </ul>

## IMPACT OF CCSSE BENCHMARKS ON FIRST-YEAR GPA

Grade Point Average (GPA) were computed for students in the sample who were first-time freshmen (first time enrolled at a college) in 2011-2012 and enrolled in at least one course with a letter grade during the summer 2011, fall 2011, winter 2012, and/or spring 2012 terms. Students who were exclusively enrolled in pass/no pass classes were excluded from the analysis. Table 17 describes the average first-year GPA for first-time freshmen.

Table 17. First-Year Grade Point Average Descriptive

SAMPLE SIZE (N)	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION
176	0.00	4.00	2.66	0.92

First-time freshmen in the CCSSE cohort earned a 2.66 average GPA in their first-year enrolled at the college. Approximately 68% of the sample had an average first-year GPA between 1.74 and 3.58.

A hierarchical multiple regression analysis found that, even when controlling for the effects of the student characteristic variables on first-year GPA, there is a statistically significant relationship between student engagement and average grades; the more students are engaged on campus, the higher their first-year GPA<sup>15</sup>. The data reveal that the group of student characteristic variables explains 26.1% of the variability in GPA. Performance on all the CCSSE benchmarks together explains an additional 8.3% of the variability in GPA. When examined individually, four variables were found to significantly explain the variation in first-year GPA:

- **Student age:** students who were of traditional college age (between 18 and 24) had GPAs that were 1.14 lower, on average, than those of non-traditional college age (25 years or older);
- **First-generation college status:** students who were the first-generation college students had GPAs that were 0.47 lower, on average, than those that were not first-generation college students;
- **Ethnicity/race:** African American/Black students had GPAs that were 0.74 lower, on average, than students from other ethnic/racial backgrounds; and,
- **Student Effort Benchmark:** every one point increase on the *Student Effort* benchmark was associated with a 1.60 increase in GPA, after controlling for all student characteristic variables. Thus, the model predicts, with all things being equal.

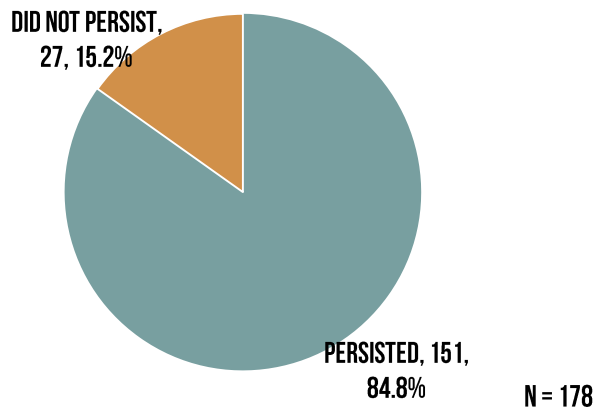
The data suggest that being a younger, first-generation, and/or African American student negatively impacted first-year GPA, but the amount of effort students apply to the learning process positively impacts first-year GPA.

<sup>15</sup>  $F(17, 98) = 3.027, p < .001$

## IMPACT OF CCSSE BENCHMARKS ON SPRING TO FALL PERSISTENCE

Persistence was defined as continued enrollment in the fall term (fall 2012) following students' enrollment in the spring term (spring 2012) when CCSSE was administered. Students in the sample who enrolled in at least one credit course in the subsequent fall term were counted as having "persisted". Figure 18 describes the percentage of students in the sample who persisted to the subsequent fall terms.

*Figure 18. Percentage of Students Who Persisted to the Subsequent Fall Term*



About 85% of first-time freshmen in the CCSSE cohort successfully persisted to the following fall term. A hierarchical logistic regression analysis found that, when controlling for the effects of the student characteristic variables on persistence, performance on the five CCSSE benchmarks did not significantly predict whether students would persist or not. The data suggest that there is no relationship between student engagement and spring-to-fall persistence for students in the cohort<sup>16</sup>. The fact that a large majority of first-time freshmen persist to the subsequent fall term, without considering the effects of student characteristic variables or level of student engagement, may have impacted the results of the regression.

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<sup>16</sup>  $\chi^2(17, N = 178) = 20.99, p = .269$

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