



Using the National Survey of Student Engagement (NSSE) to Examine the Impact of the SAGES Pilot Program

Abstract:

Utilizing data from the National Survey of Student Engagement (NSSE), this report will present an analysis of the first two SAGES pilot classes. From our analyses a number of interesting patterns emerge:

- Compared to non-SAGES participants, those who participated in SAGES reported significantly higher levels on four out of five NSSE benchmarks -- Academic Challenge (AC), Active and Collaborative Learning (ACL), Student-Faculty Interaction (SFI), and Supportive Campus Environment (SCE) -- during either their first or sophomore year.
- There were no differences between SAGES and non-SAGES students on any of the benchmark scales during junior and senior years.
- Scores on the Supportive Campus Environment (SCE) benchmark decline over time for all students, regardless of SAGES participation, and are significantly lower in the sophomore, junior, and senior years compared to the first year.
- Taken together, these results suggest that those in SAGES experience early gains during their career at Case, but that by junior year there were no differences between those in the SAGES program and those not in SAGES.

SAGES Analysis:

In the fall of 2002, 150 entering students were enrolled in a pilot study to determine the impact of the proposed SAGES curriculum. This report will present an analysis of the SAGES program utilizing data from the National Survey of Student Engagement (NSSE, pronounced “nessie”). NSSE was developed to assess the quality of undergraduate learning by asking students to report on their own engagement in classroom learning, in campus activities, and in the community. Research on college outcomes suggests that these types of engagement questions are fairly accurate predictors of student learning and development. Because SAGES emphasizes—and NSSE measures—student engagement in the classroom, on campus and in the community, the decision was made to use NSSE to measure the impact of SAGES. Five benchmarks of effective educational practice were created by NSSE in order to consolidate the 80-plus individual items on the survey into easily interpretable, psychometrically sound scales: Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment

Method:

Students who matriculated in the fall of 2002 were asked to complete the NSSE survey each February during their time at Case (i.e., first, sophomore, junior, and senior years). Likewise, students who matriculated in the fall of 2003 were asked to complete the NSSE survey in February of their first, sophomore and senior years at Case (but not during their junior year). Participating students were coded as being in the SAGES pilot program or as being in the general University population. In the present report, the two cohorts were collapsed and analyzed together.

In their first year at Case, 629 students completed the NSSE survey; 478 from the general population and 151 from the SAGES pilot. Of these initial participants, 318 completed the survey during their sophomore year (222 from the general population and 96 from the SAGES pilot). Juniors from only the first of the two cohorts completed the survey; therefore, the junior year sample was composed of only 137 students (90 from the general population and 47 from the SAGES pilot) and should be interpreted with caution. Finally, 234 seniors completed the survey (164 from the general population and 70 from the SAGES pilot). In order to determine significant group differences, 2 (SAGES participation) X 4 (Class Level) ANOVAs were conducted for each of five NSSE benchmark scales (see description below). When significant differences were found, one-way ANOVAs were conducted separately on each group (SAGES vs. non-SAGES) to determine differences by class level.

NSSE Benchmarks¹:

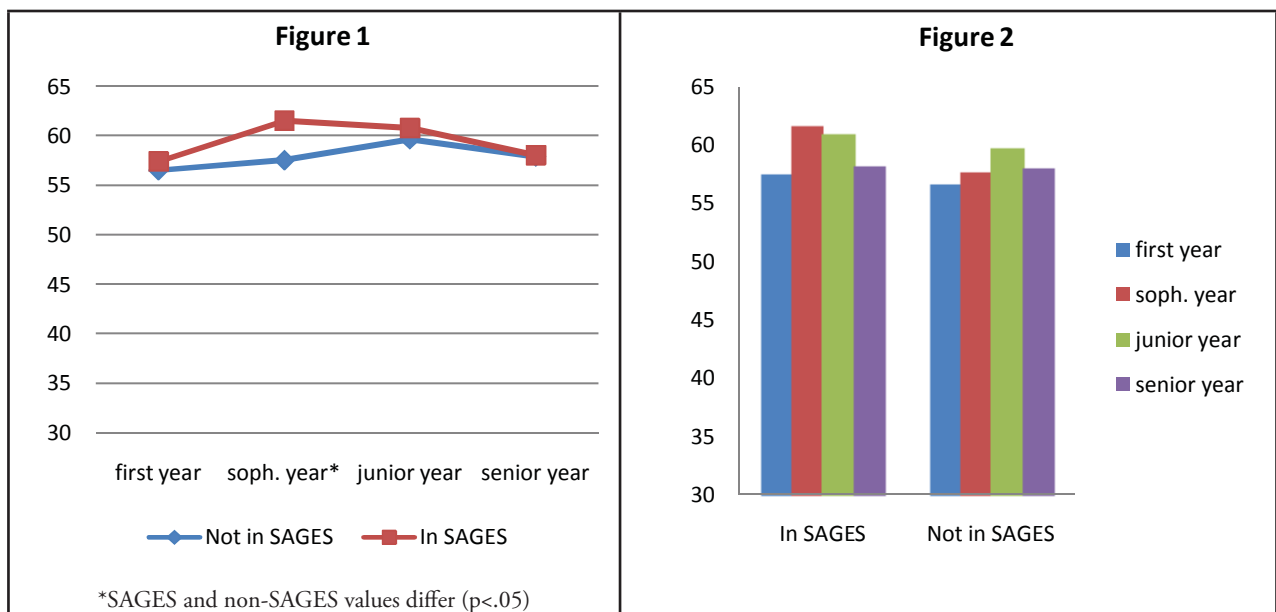
Many of the individual NSSE survey questions are of interest in their own right and will be discussed in future IR reports. That being said, we have chosen to focus our first report on the five benchmarks scales created by NSSE in order to consolidate the 80-plus individual items into five easily interpretable, psychometrically sound scales. Each of the five benchmarks will be presented in detail in the discussion of results that follows. Please note that when students answer questions on the NSSE they are answering based on the whole curriculum, not just on their SAGES or analogous GER courses.

¹ Benchmark scores have a theoretical range of 0-100; however, national averages for the 5 scales never approach the theoretical maximum. The 2003-2006 ranges for the national average of each scale are as follows: 52-54 (AC); 41-42 (ACL); 32-33 (SFI); 59-63 (SCE); 26-27 (EEE; 2004 and after). Each graph ranges from 30 – 65.

Academic Challenge:

Benchmark: The level of Academic Challenge benchmark measures the extent to which students exert—and institutions demand—academic effort. Items include time spent preparing for class, number of assigned textbooks, and the extent to which the campus environment is perceived to emphasize academics.

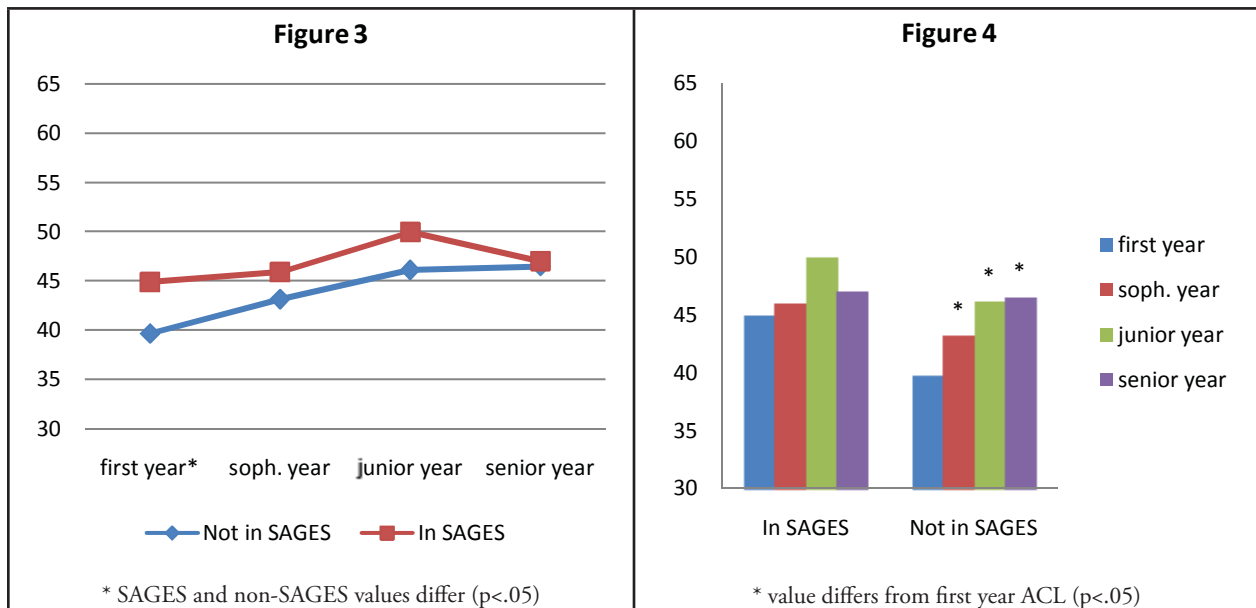
Results: Results indicated that sophomore students in SAGES reported greater academic challenge (AC) than their non-SAGES peers, but that SAGES participation did not have an effect on ACL during the students’ first, junior and senior years (Figure 1). There was no significant effect for class level on academic challenge (AC). In other words, students reported equal levels of AC in each of their four years at Case, regardless of class level (Figure2)



Active and Collaborative Learning:

Benchmark: Active and Collaborative Learning measures the extent to which students engage in classroom activities and collaborate with others to solve problems. Items include the extent to which students asked questions in class, made class presentations, and worked with other students on projects inside and outside of class.

Results: Results of our analysis revealed that first-year students in SAGES reported greater active and collaborative learning (ACL) than their non-SAGES peers, but that SAGES participation did not have an effect on ACL during the students' sophomore, junior and senior years (Figure 3). There was no significant effect for class level on ACL among those in SAGES (left side of Figure 4). However, in the non-SAGES group, ACL during the first year was significantly lower than ACL during sophomore, junior and senior years (right side of Figure 4).

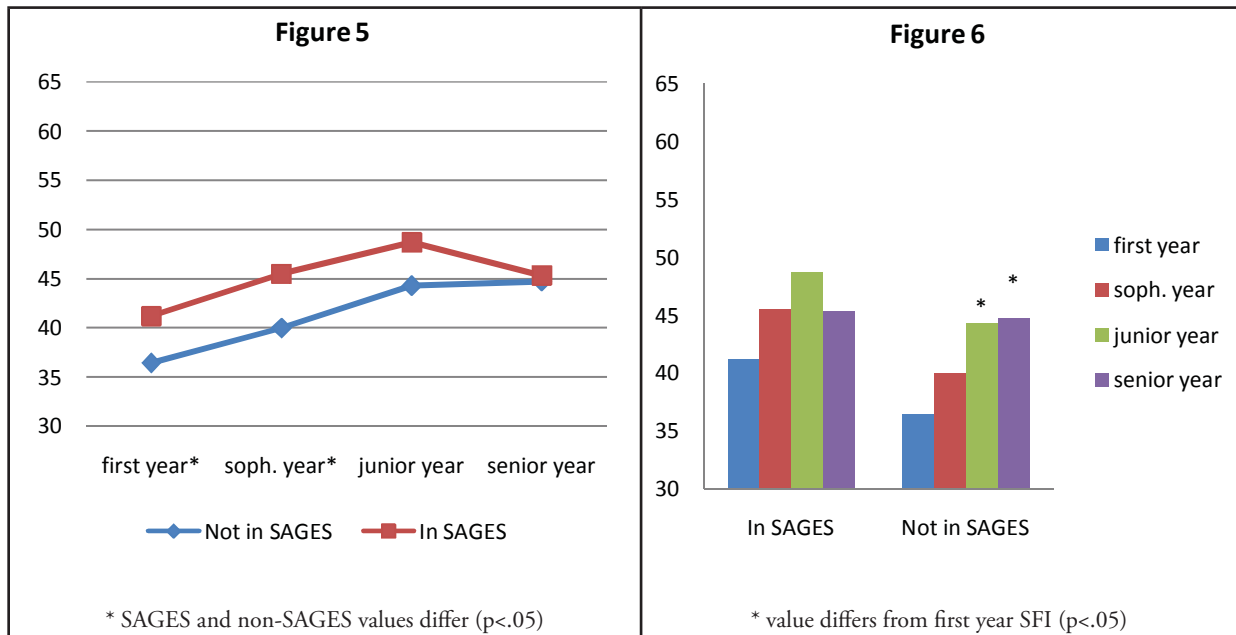


Student-Faculty Interaction:

Benchmark: Student-Faculty Interaction measures the extent to which students learn and solve problems by interacting with faculty members. Items include the extent to which students discussed grades with faculty, frequency with which students worked with faculty members on activities other than coursework, and promptness with which students received feedback on their academic performance.

Results: Results of our analysis revealed that first-year and sophomore students in SAGES reported more student-faculty interaction (SFI) than their non-SAGES peers, but that junior and senior year students reported experiencing SFI with statistically equivalent frequency regardless of their SAGES participation (Figure 5).

Results revealed no year-to-year differences in SFI among those in SAGES. However, in the non-SAGES group, there was a significant increase in perceived SFI between first and junior years and between first and senior years (right side of Figure 6).

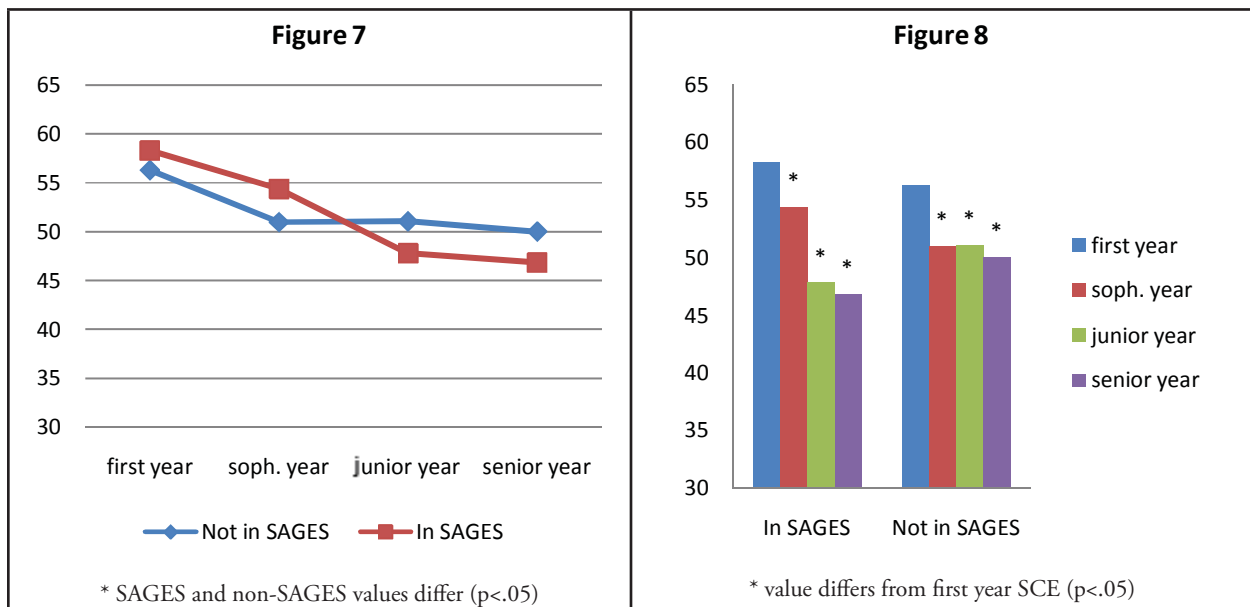


Supportive Campus Environment:

Benchmark: Supportive Campus Environment measures the extent to which students believe that the institution is committed to their success and cultivates positive relations among different groups on campus. Items include students' quality of relationships with faculty and peers, and the extent to which the campus environment is perceived to provide support to succeed socially and academically.

Results: As seen in Figure 7, first year students in SAGES reported experiencing a more supportive campus environment (SCE) than their non-SAGES peers, but SAGES participation did not have an effect on SCE during the students' sophomore, junior and senior years

An analysis of year-to-year differences in SCE among those in SAGES and those not in SAGES revealed that, in both groups, reports of SCE during sophomore, junior, and senior years were significantly lower than reports of SCE during the first year (Figure 8).

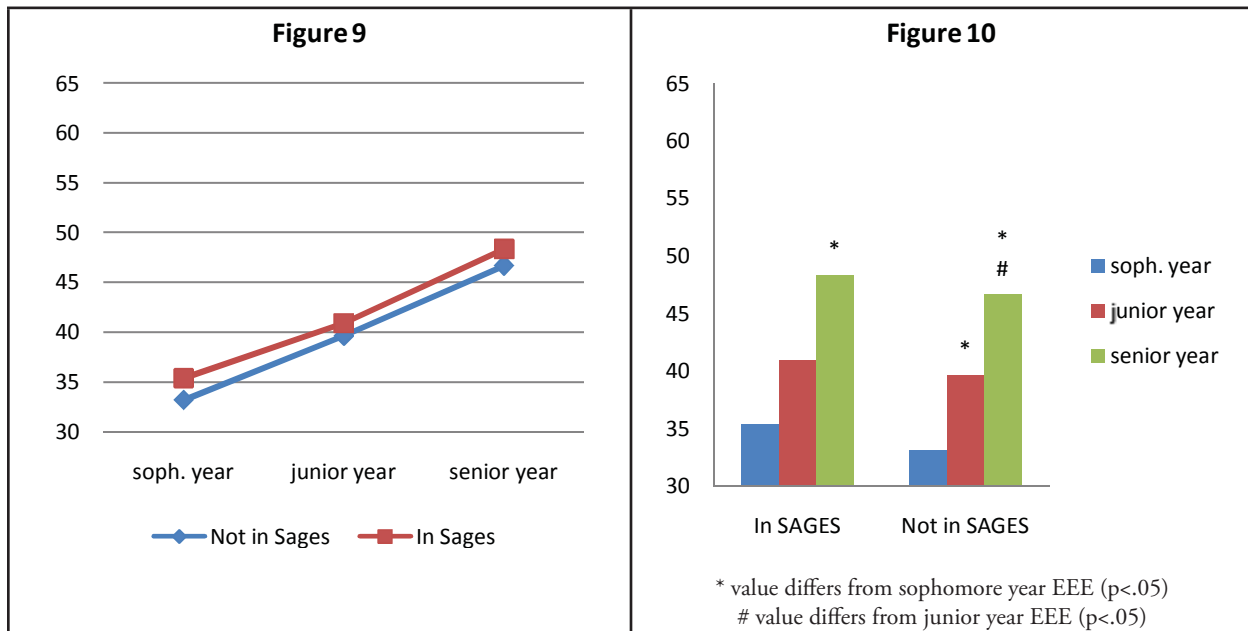


Enriching Educational Experiences:

Benchmark: Enriching Educational Experiences measures the extent to which students engage in complementary learning opportunities in and out of class. Items include student participation in co-curricular activities, community service or volunteer work, and using electronic technology to discuss or complete an assignment.

Please note: NSSE made alterations in the scale's items between 2003 and 2004. Because we collapsed the 2003 and 2004 first-year cohorts, the change in the scale precludes us from making comparisons within the freshman year. As a result, our analyses focus on differences in the sophomore, junior, and senior years.

Results: Our analysis revealed no significant effect for SAGES participation on enriching educational experiences (EEE). However, among those in SAGES, reports of EEE during senior year were significantly higher than reports of EEE during the sophomore year (left side of Figure 10). Similarly, among those not in SAGES, reports of EEE during junior and senior years were significantly higher than sophomore year reports of EEE, and senior year reports of EEE were significantly higher than junior year reports of EEE (right side of Figure 10).



Follow-up Analyses:

Because students in these two SAGES pilot classes chose to participate in the program, the design of the study is not random. As such, we re-ran each of the above analyses utilizing analysis of covariance (ANCOVA) in which we statistically controlled for the effects of gender and SAT scores on the NSSE benchmark scales before determining whether SAGES participation had an effect on the scales. Results indicated that, even after controlling for gender and SAT scores, first-year students in the SAGES program scored significantly higher than their non-SAGES peers on the Active and Collaborative Learning, Student Faculty Interaction, and Supportive Campus Environment scales. Sophomore year students in the SAGES program scored significantly higher than their non-SAGES peers on the Academic Challenge scale. Finally, as with the original analysis, in the junior and senior years there were no differences between those in the SAGES program and those not in SAGES.

Future Directions:

It is our intention for this report to be the first of several to examine the impact of SAGES on student outcomes. We have planned a number of future analyses using the NSSE data. Specifically, we intend to extend this analysis of benchmark scales by examining the effect of SAGES participation on individual NSSE items. We are also interested in determining if the early gains by SAGES participants predict senior year outcomes. If there are specific questions about NSSE or SAGES that you think will help inform the university population, please contact us and we can discuss possible options for future analyses