

Supplemental Instruction: 2014-2015 Data Summary

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Introduction

Supplemental Instruction (SI) is a tutoring support program that relies on peer-assisted collaborative learning strategies in group sessions to help students be successful in specific SI-supported course sections. SI sessions are regularly-scheduled informal review sessions in which students engage in interactive study groups, discuss course content, learn and integrate study skills, participate in learning activities, and take mock exams. Funded by the Title V grant, the SI program at Santa Monica College was launched in fall 2008 to support classroom learning in basic skills courses; however, reliable data is not available prior to the winter 2009 term. The SI-session attendance tracking software was revised for the fall 2012 and the accuracy of the records has improved as a result.

SI-supported courses were originally sections of selected basic skills courses in math and English, but over time the SI-supported course offerings have expanded to include non-basic skills courses and courses in other disciplines, especially STEM disciplines. The SI program was institutionalized when the original grant ended and is currently funded jointly by the district and STEM grant.

Previous research¹ completed by the Office of Institutional Research found that participation in SI was related to increases in success rates, persistence to subsequent terms and basic skills progression.

This brief includes data from the academic year 2014-2015. During this year, SI-supported sections were offered in 26 courses across 9 disciplines and was utilized by 1,446 unique students enrolled in SI-sections. The SI program also serves students who request assistance, but are not enrolled in SI-supported course sections. Across the study period, 574 such students also received tutoring assistance through the SI program.

Utilization of SI Tutoring

SI leaders keep track of attendance at SI tutoring and records are inputted through the college's student information system, Integrated School Information System (ISIS). As a result of prior evaluations of the program², students are encouraged to attend at least five tutoring sessions in order to receive a benefit from participation in the program.

¹ Research Brief #683

² Research Brief #42

Consistent with this recommendation, students were categorized based on the number of sessions the student attended during the semester:

- None – students who did not attend any SI tutoring sessions.
- Minimal – students who attended between one and four SI tutoring sessions.
- Full – students who attended five or more SI tutoring sessions.

Across the two semesters being studied, there were 3,147 enrollments in SI-supported class sections. About half of students (51.9%) never attended a single session. This is an improvement from 60% during fall 2012 through spring 2014 terms. Table 1 below contains the rates of participation by subject for the 2014-2015 academic year.

Table 1. SI Participation by Subject

Subject	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
ACCTG	135 50.6%	79 29.6%	53 19.9%	267 100.0%
BIOL	120 60.3%	51 25.6%	28 14.1%	199 100.0%
CHEM	97 36.1%	102 37.9%	70 26.0%	269 100.0%
ECON	85 48.3%	62 35.2%	29 16.5%	176 100.0%
ENGL	217 69.6%	76 24.4%	19 6.1%	312 100.0%
GEOL	27 36.5%	28 37.8%	19 25.7%	74 100.0%
MATH	861 49.9%	486 28.2%	379 22.0%	1726 100.0%
PHYSCS	37 40.2%	32 34.8%	23 25.0%	92 100.0%
SPAN	24 75.0%	6 18.8%	2 6.3%	32 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

About 20% of students in SI-supported courses participated in at least five SI sessions. The subjects with the highest participation rates were CHEM and GEOL at 63.9% and 63.5%, respectively. Both of these subjects are categorized as STEM. Table 2 below contains the participation rates by STEM status.

Table 2. SI Participation by STEM Status

Course Type	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
STEM	1142 48.4%	699 29.6%	519 22.0%	2,360 100.0%
Non-STEM	461 58.6%	223 28.3%	103 13.1%	787 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

Students in SI-supported STEM sections had a participation rate that was 10.2% higher than students in non-STEM sections. Additionally, STEM students participated in at least five SI sessions at higher rates (22.0% vs. 13.1%).

Table 3 below, contains the participation rates by transfer level. Credit courses that are non-transferable are categorized as basic skills courses. These courses are exclusively math, English and ESL courses.

Table 3. SI Participation by Transfer Level

Course Type	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
Transfer Level	787 47.1%	540 32.3%	343 20.5%	1,670 100.0%
Basic Skills Level	816 55.2%	382 25.9%	279 18.9%	1,477 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

The overall SI participation rate was higher for students in transfer level courses compared to students in basic skills courses (52.9% and 44.8%, respectively). Most of that difference is made up by the gap in the minimal participation rate, where students in transfer level courses have a participation rate that is 9.4% higher than those in basic skills courses.

Participation by Demographic Measures

Participation rates were examined to determine if they differed between students on the demographic measures of gender, ethnicity, age group, veteran status, disability status and low-income status.

Table 4. SI Participation by Gender

Gender	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
Female	746 50.2%	445 29.9%	295 19.9%	1,486 100.0%
Male	857 51.6%	477 28.7%	327 19.7%	1,661 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

Female and male students had very similar participation rates. Among both genders, about 20% of students obtained the recommended amount of tutoring.

Table 5. SI Participation by Ethnicity

Ethnicity	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
Asian/PI	244 52.5%	134 28.8%	87 18.7%	465 100.0%
Black	149 52.1%	88 30.8%	49 17.1%	286 100.0%
Hispanic/Latino	751 51.6%	431 29.6%	274 18.8%	1,456 100.0%
Native American	2 50.0%	1 25.0%	1 25.0%	4 100.0%
Two or more	59 60.8%	24 24.7%	14 14.4%	97 100.0%
White	288 47.6%	170 28.1%	147 24.3%	605 100.0%
Unreported	110 47.0%	74 31.6%	50 21.4%	234 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

While overall participation in SI was not greatly different by ethnicity, there were some differences in the percentages of students who participated in five or more sessions. White students had the highest full participation rate at 24.3%, while Asian, Black and Hispanic/Latino students had full participation rates of 18.7%, 17.1% and 18.8%, respectively.

Table 6. SI Participation by Age Group

Age Group	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
19 and under	717 52.6%	398 29.2%	248 18.2%	1,363 100.0%
20 to 24	713 52.2%	392 28.7%	262 19.2%	1,367 100.0%
25 to 29	120 43.2%	91 32.7%	67 24.1%	278 100.0%
30 and above	47 39.2%	33 27.5%	40 33.3%	120 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

Like in previous years, SI participation is more common in older students. Those 30 and above had an overall SI participation rate of 60.8% compared to 47.7% for students 19 and under. These differences were mostly evident in the respective groups' full participation rate.

Table 7 below contains the SI participation rates for students who received any services at the college's Disabled Student Program and Services (DSPS).

Table 7. SI Participation by Disability Status

Disability Status	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
DSPS	53 35.3%	49 32.7%	48 32.0%	150 100.0%
Non-DSPS	1,550 51.7%	873 29.1%	574 19.2%	2,997 100.0%
All SI Section Enrollments	1,603 50.9%	922 29.3%	622 19.8%	3,147 100.0%

Students who were identified as having received services at DSPS had an overall participation rate of 64.7%. Their full participation rate was 32.0%, or 12.8% higher than non-DSPS students.

Table 8. SI Participation by Veteran Status

Veteran Status	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
Veteran	44 51.8%	21 24.7%	20 23.5%	85 100.0%
Non-Veteran	1,559	901	602	3,062

	50.9%	29.4%	19.7%	100.0%
All SI Section	1,603	922	622	3,147
Enrollments	50.9%	29.3%	19.8%	100.0%

Students who were identified as Veterans had SI participation rates consistent with the overall population. Their full participation rate was about 4% points higher than non-Veterans.

Table 9 below contains the SI participation rate by income status. The low income categorization is based on the definition included in the college's 2014 Student Equity Data Report³. Students were categorized as low income if they met one or more of the following criteria:

- Received a BOG fee waiver,
- Received a Pell grant,
- Reported being a CalWORKs student,
- Reported being a disadvantaged student on the VTEA survey,
- Reported by the Department of Social Services as receiving aid, and/or reported as being a Workforce Investment Act (WIA) participant

Table 9. SI Participation by Income Status

Income Status	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
Low Income	1,068 51.5%	612 29.5%	392 18.9%	2,072 100.0%
Not Low Income	535 49.8%	310 28.8%	230 21.4%	1,075 100.0%
All SI Section	1,603	922	622	3,147
Enrollments	50.9%	29.3%	19.8%	100.0%

The majority of enrollments in SI-supported sections were categorized as low income (65.8%). Those students had similar overall and full participation rates as those categorized as not low income.

Outcomes by SI Participation Levels

Using the same SI participation level categories (i.e. *none*, *minimal*, *SI*) groups were compared on two different success measures: successful course completion and in the case of basic skills students, progression to a higher-level course.

³<http://www.smc.edu/EnrollmentDevelopment/InstitutionalResearch/Documents/Reports/Student%20Equity/SMCStudentEquityData2014.pdf>

As noted, the SI program has been evaluated previously by the Office of Institutional Research. Analyses conducted for Research Brief #683, which analyzed SI data for academic years 2012-2013 and 2013-2014, showed that:

- There were statistically significant differences in success rates by the different participation levels; students who participated in five or more sessions had the largest success rates.
- This pattern was evident when the data was disaggregated by a course’s STEM and transfer level status.
- These differences were also significant when controlling for age, gender, ethnicity and previous grade point average (GPA).

Success Rates by Participation

Success rates by level of SI participation are summarized in Table 10 below.

Table 10. Course Success by Level of SI Participation

Participation Level	Count of Enrollments	Success Rate
No SI Participation	1,603	40.7%
“Minimal” Participation	922	53.0%
“Full” Participation	622	71.4%
All Students in SI Sections	3,147	50.4%

Overall, 50.4% of enrollments resulted in a successful grade. Students who did not receive any SI tutoring performed most poorly, with about 41% of enrolled students earning a successful grade. Those students who had some minimal exposure to SI by attending between 1 and 4 sessions did slightly better with 53% of grades being successful. The highest success rate, 71%, was observed among those students who received the recommended amount of SI tutoring (5+ sessions).

Table 11. Course Success by STEM Status

Course Type	No SI Participation	“Minimal” Participation	“Full” Participation	Total Enrollments
STEM Courses	38.0%	49.4%	71.5%	48.7%
	1,142	699	519	2,360

Non-STEM Courses	47.3%	64.6%	70.9%	55.3%
	461	223	103	787
Success Rate	40.7%	53.0%	71.4%	50.4%
Total Enrollments	1,603	922	622	3,147

STEM students who participated in SI had higher success rates than students who did not participate. In particular, students who received the recommended amount of SI tutoring had success rates that were 22.1% higher than students who had minimal participation. This gap is much larger than in non-STEM courses, where the difference was only 6.3%.

Table 12. Course Success by Transfer Level

Course Type	No SI Participation	"Minimal" Participation	"Full" Participation	Total Enrollments
Transfer Level	43.8%	58.7%	73.5%	54.7%
	787	540	343	1670
Basic Skills Level	37.6%	45.0%	68.8%	45.4%
	816	382	279	1477
Success Rate	40.7%	53.0%	71.4%	50.4%
Total Enrollments	1,603	922	622	3147

The pattern of results for SI participation by transfer level is consistent with the overall analyses for the entire population.

Basic Skills Completion by Participation

Basic skills enrollments in English and math were examined to determine whether a higher percentage of students who participated in SI progressed to a higher course in the basic skills sequence. Table 13 below includes only students who were enrolled in English or math courses that were at least two-levels below transfer. The students' subsequent enrollments were examined and a student was considered to have "progressed" if he enrolled in a higher-level course within one year. As such only basic skills enrollments from fall 2014 were included.

Table 13. Basic Skill Progression by Level of SI participation

Participation Level	Count of Enrollments	Basic Skills Progression Rate
No SI Participation	333	48.0%

“Minimal” Participation	135	56.3%
“Full” Participation	99	70.7%
All Students in SI Sections	567	54.0%

Students who participated in at least five SI session had progression rates that were higher than both students with minimal and no SI participation. Students who had at least minimal participation in SI had progression rates that were 8.3% higher than students who did not participate in any SI sessions.

Success Rates by Participation and Student Demographics

Students successfully completed a course if they earned an A, B, C, or P grade. Unsuccessful grades are D, F, NP, and W. Any ‘report delayed’ or ‘in-progress’ grades were excluded.

The tables in this section contain columns titled “Equity Gap”. This refers to the gap in the success rate between the subgroup and the overall average. The focus on the Equity Gap in success rates is part of the college’s efforts to address inequity in student outcomes for traditionally disadvantaged groups.

Table 14. Success Rate by Participation and Gender

	Participated in SI	Equity Gap	No SI Participation	Equity Gap
Female	59.3%	-1.1%	41.8%	
	740		746	
Male	61.4%		39.7%	-1.0%
	804		857	
Success Rate	60.4%		40.7%	
Count	1,544		1,603	

Both males and females who participated in SI had higher success rates than those that did not.

Table 15. Success Rate by Participation and Ethnicity

	Participated in SI	Equity Gap	No SI Participation	Equity Gap
Asian/PI	71.5%		52.9%	
	221		244	
Black	47.4%	-13.0%	27.5%	-13.2%

	137		149	
Hispanic/Latino/Latino	53.0%	-7.4%	35.6%	-5.1%
	705		751	
Native American	100.0%		50.0%	
	2		2	
Two or more	63.2%		33.9%	-6.8%
	38		59	
White	70.0%		45.1%	
	317		288	
Unreported	71.0%		58.2%	
	124		110	
Success Rate	60.4%		40.7%	
Count	1,544		1,603	

While the success rates for Hispanic/Latino and Black students was higher for those who participated in SI, the equity gap persisted. Asian/Pacific Islander and White students who participated in SI had a larger increase in success rates than Black and Hispanic/Latino students.

Table 16. Success Rate by Participation and Veteran Status

	Participated in SI	Equity Gap	No SI Participation	Equity Gap
Veteran	68.3%		22.7%	-17.9%
	41		44	
Non-Veteran	60.2%	-0.2%	41.2%	
	1,503		1,559	
Success Rate	60.4%		40.7%	
Count	1,544		1,603	

Not only did Veteran students who participated in SI have higher success rates than those that did not, there was not a gap between their success rate and the overall success rate.

Table 17. Success Rate by Participation and Disability Status

	Participated in SI	Equity Gap	No SI Participation	Equity Gap
DSPS	54.6%	-5.8%	45.3%	
	97		53	
Non-DSPS	60.8%		40.5%	-0.2%

	1447	1550
Success Rate	60.4%	40.7%
Count	1,544	1,603

The success rate for DSPS students who participated in SI was higher than those that did not. Non-DSPS students who participated in SI saw a larger increase in their success rate than students in DSPS.

Table 18. Success Rate by Participation and Low Income Status

	Participated in SI	Equity Gap	No SI Participation	Equity Gap
Low Income	56.8%	-3.7%	34.8%	-5.8%
	1,004		1,068	
Not Low Income	67.2%		52.3%	
	540		535	
Success Rate	60.4%		40.7%	
Count	1,544		1,603	

Low-income students who participated in SI had higher success rates and a smaller equity gap than similar students who did not participate in SI.

Summary

During the 2014-2015 academic year there were 82 SI supported sessions.

- About 49% of students attended at least one session, and about 20% attended the recommended five sessions.
- Participation was higher for students enrolled in STEM courses compared to non-STEM courses, and in transfer level courses compared to basic skills courses.
- White students had higher full participation rates than Asian/PI, Black and Latino students.

- Older students, Veteran students and students in DSPS had higher participation rates than their peers.
- As in previous years, students who participated in at least five sessions had higher success rates than students who attended fewer sessions. The latter had higher success rates than students who did not attend any sessions.
- Students in basic skills courses who participated in SI progressed to higher level basic skill course at a higher rate than those who did not participate.
- While the success rate for Black and Hispanic students was higher for those who participated in SI, equity gaps still existed for these students.