Institutional Effectiveness,
Research & Planning

Research Brief

Spring 2013 Success and Completion Rates of Transfer Prep Students in the Supplemental Instruction (SI) Program

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About this Brief

Transfer Prep Supplemental Instruction (SI) at Crafton Hills College is a Title V academic support program whose objective is to improve student retention and success in historically challenging courses. The SI model provides peer support through regular review sessions outside the classroom with SI leaders (students who successfully completed the course). **This brief analyzes the Spring 2013 success and completion rates of the 105 Transfer Prep students who participated in the SI program offered in conjunction with Crafton courses.**

Summary of Findings

- 105 students attended at least one SI session and earned a Grade on Record (GOR) in Spring 2013

- 63.8% of students who participated in SI, attended two or more SI sessions

- Students who attended two or more SI sessions had a statistically significant and substantially higher success rate (76.1%) than students in the same section who did not attend SI (56.6%)

- Hispanic students who attended two or more SI sessions had a statistically significantly and substantially higher success rate (79.3%) than Hispanic students who did not attend SI (56.6%)

- Hispanic students who attended two or more SI sessions were statistically significantly and substantially more likely to complete their courses (100%) than Hispanic students in the same course who did not attend SI (92.6%)

METHODOLOGY

The success[1] and completion[2] rates of Transfer Prep students who participated in SI were compared to students in the same section who did not participate in SI. Students who attended a SI session one or more times and two or more times were compared to those students who did not attend a SI session and were enrolled in the same course section. Similarly, because the benefits of SI are likely greater for students attending two or more SI sessions, students who attended two or more times were also compared with students who did not attend. The analysis also includes success and completion rates disaggregated by ethnicity, gender and age.

The effect size (ES) statistic, frequently applied in meta-analysis, was used to illustrate the difference among success and completion rates for students who attended SI in contrast to those students who did not. A system by which ES can be interpreted was developed by Jacob Cohen, a renowned statistician and psychologist. Cohen defined "small", "medium", and "large" effect sizes as .20, .50, and .80, respectively. An effect size of .20 or higher is considered meaningful. Moreover, the number of students in each group does not influence effect size, whereas, when statistical significance is calculated, the number of students affects significance level (i.e. "p-value" is lower than .05). ES and the p-value were calculated by comparing students that attended two or more SI sessions with students who did not attend a SI session.

FINDINGS

PARTICIPATION

In the Spring 2013, 105 students attended at least one SI session. Of those 105 students, 100% of students earned a Grade on Record (GOR) in a course section associated with SI. Tables 1a and 1b illustrate the number of students who attended a SI session and earned a GOR in a section with SI. Nineteen percent (18.9%) of students enrolled in a section with SI attended at least one session; and 63.8% (67 of 105) of students who participated in SI attended two or more sessions.

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1. Success rate is defined as earning a grade of A, B, C, or CR/P divided by the number of Grades on Record (GOR): A, B, C, D, F, P, NP, I or W.
2. Completion is defined as the number of A, B, C, D, F, CR/P, NC/NP, or I grades divided by the number of GOR.

Table 1a. Percent of Students Who Attended SI Sessions by Number of Sessions and by Course.

SI Course	Did not attend an SI session		Attended one or more SI sessions*		Attended two or more SI sessions	
	#	%	#	%	#	%
CD-105	61	56.5	27	25.0	20	18.5
ENGL-101	40	72.7	11	20.0	4	7.3
ENGL-102	25	92.6	1	3.7	1	3.7
HIST-100	108	68.4	35	22.2	15	9.5
HIST-101	119	79.9	16	10.7	14	9.4
PSYCH-100	99	78.0	15	11.8	13	10.2
Total	**452**	**72.4**	**105**	**16.8**	**67**	**10.7**

Note: This table includes students who were enrolled in more than one section with SI and some students who attended SI despite not being enrolled in a section where SI was offered.
*The data in column "Attended one or more SI sessions" is inclusive of "Attended two or more SI sessions".

**Table 1b.** Percent of Students Who Attended SI Sessions by Course Section.

SI Course Section	Students Who Attended SI		
	#	N	%
CD-105-10	18	44	40.9
CD-105-25	9	44	20.5
ENGL-101-35	7	25	28.0
ENGL-101-40	4	26	15.4
ENGL-102-35	1	26	3.8
HIST-100-35	26	70	37.1
HIST-100-40	6	70	8.6
HIST-100H-35	1	1	100.0
HIST-100H-40	2	2	100.0
HIST-101-10	3	68	4.4
HIST-101-15	13	67	19.4
PSYCH-100-25	1	48	2.1
PSYCH-100-45	13	64	20.3
PSYCH-100H-45	1	2	50.0
Total	**105**	**557**	**18.9**

Note: This table includes those same students who were enrolled in more than one SI section and some students who attended SI despite not being enrolled in a section where SI was offered. "#" represents the number of students who attended SI at least once and earned a GOR, "N" represents the total number of students with a GOR in the section, and "%" represents the percent of students who attended at least one SI session.

STUDENT SUCCESS RATES

Students who attended a SI session one more times and two or more times were compared to students who did not attend SI. Students who attended two or more SI sessions had a statistically significant (p=.037) and substantially higher (ES=0.25) success rate (76.1%) than students who did not attend at least one SI session (64.2%) (see Figure 1 and Table 2a). In particular, SI appeared to have the largest relationship with success for students who were enrolled in PSYCH-100. **Students in PSYCH-100 who attended SI two or more times had a statistically significant (p=.040) and substantially (ES=0.50) higher success rate (84.6%) than students who did not attend SI (60.6%).**

Figure 1. Spring 2013 Transfer Prep SI Success Rate by Number of Sessions Attended.

Transfer Prep Student Success Rates (%)

	Did not attend an SI session	Attended one or more SI sessions	Attended two or more SI sessions
	64.2%	76.2%	76.1%
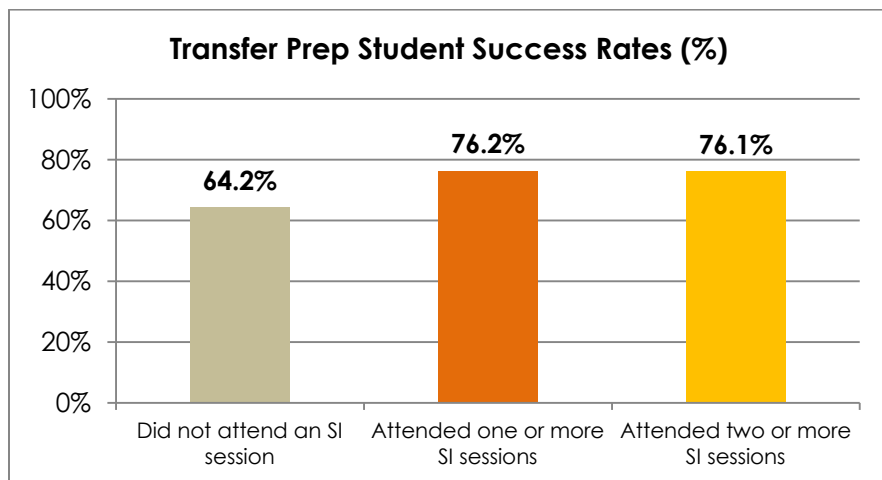
Table 2a. Spring 2013 Student **Success Rates** by Number of Sessions Attended and by Course.

SI Course	Number of Sessions Attended									Effect Size (ES)	P-Value
	Did not attend an SI session			Attended one or more SI sessions			Attended two or more SI sessions				
	#	N	%	#	N	%	#	N	%		
CD-105	38	61	62.3	19	27	70.4	14	20	70.0	0.16	.531
ENGL-101	25	40	63.5	8	11	72.7	2	4	50.0	0.25	.678
ENGL-102	17	25	68.0	1	1	100.0	1	1	100.0	0.68	■■■
HIST-100	65	108	60.2	26	35	74.3	11	15	73.3	0.27	.304
HIST-101	85	119	71.4	14	16	87.5	12	14	85.7	0.32	.178
PSYCH-100	60	99	60.6	12	15	80.0	11	13	84.6	0.50	.040
Totals	**290**	**452**	**64.2**	**80**	**105**	**76.2**	**51**	**67**	**76.1**	**0.25**	**.037**

Note: This table includes some students that attended SI despite not being enrolled in a course where SI was offered and students who were enrolled in more than one SI course. Effect size and P-Value were generated utilizing data from "did not attend an SI session" and "attended two or more sessions."

Hispanic Students

Student success rates were disaggregated by ethnicity and gender. Hispanic students who attended two or more SI sessions had a statistically significantly (p=.008) and a substantially (ES=0.46) higher success rate (79.3%) than Hispanic students in the same section who did not attend SI (56.6%)(see Figure 2 and Table 2b).
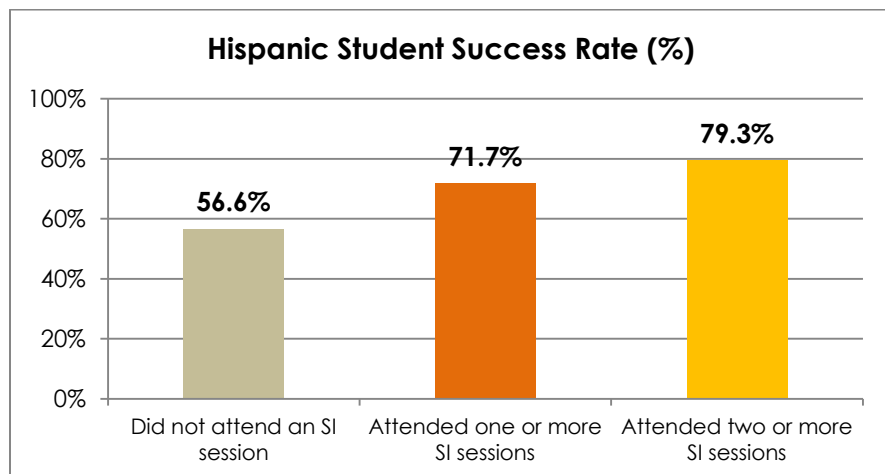
Gender

Female students who attended two or more SI sessions also had a statistically significantly (p=.013) and a substantially (ES=0.35) higher success rate (80.9%) than female students in the same section who did not attend SI (64.5%). The results illustrate that male students who participated in two or more SI sessions were not statistically significantly (p=.922) nor substantially (ES=0.02) more likely to successfully complete their courses than male students in the same course sections. However, a limitation is that the sample size for female students is greater than for male students.

Age

The data also illustrates that students who were in the 20-24 year-old age category and who attended two or more SI sessions were statistically significantly (p<.001) and substantially (ES=0.59) more likely to successfully complete their course, but as with gender, the sample size for this particular age category is much greater. Students who were in the 35-39 year-old age category were also substantially (ES=0.45) more likely to succeed in their course, but the results were not statistically significant (p=.347).

Figure 2. Hispanic Student Success Rates by Number of Sessions Attended.

Hispanic Student Success Rate (%)

Table 2b. Spring 2013 Student **Success Rates** Disaggregated by Ethnicity and Gender.

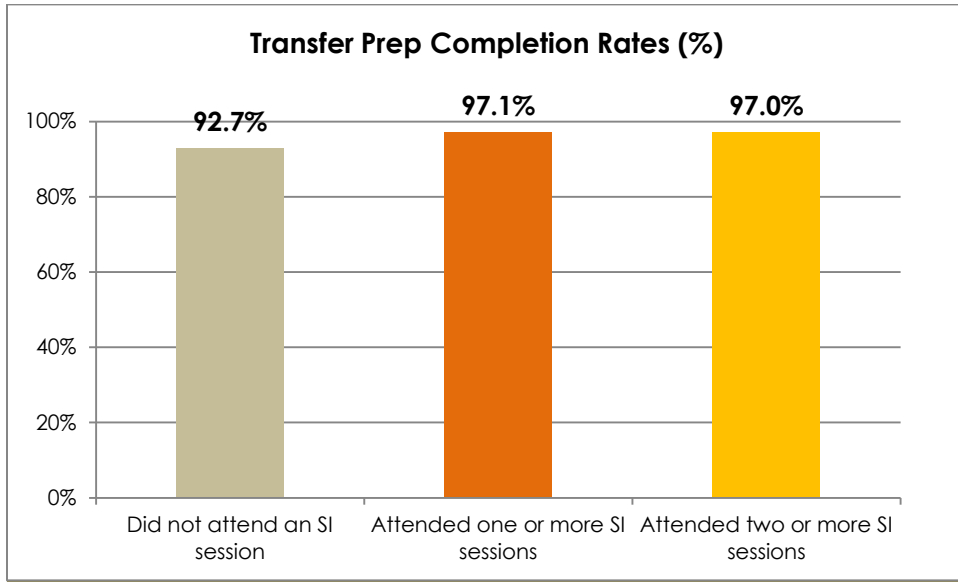| Ethnicity	Did not attend an SI session			Attended one or more SI sessions			Attended two or more SI sessions			Effect Size (ES)	P-Value
	#	N	%	#	N	%	#	N	%		
Hispanic	99	175	56.6	33	46	71.7	23	29	79.3	0.46	.008
African American	14	29	48.3	9	12	75.0	4	7	57.1	0.17	.693
Asian	18	26	69.2	8	9	88.9	5	6	83.3	0.31	.465
Native American/Alaskan Native	6	11	54.5	0	1	0.0					
Caucasian	151	207	72.9	30	37	81.1	19	25	76.0	0.07	.742
Missing	2	4	50.0								
Total	**290**	**452**	**64.2**	**80**	**105**	**76.2**	**51**	**67**	**76.1**	**0.25**	**.037**
Gender	#	N	%	#	N	%	#	N	%	**Effect Size (ES)**	**P-Value**
Female	167	259	64.5	56	70	80.0	38	47	80.9	0.35	.013
Male	122	191	63.9	24	35	68.6	13	20	65.0	0.02	.922
Age	#	N	%	#	N	%	#	N	%	**Effect Size (ES)**	**P-Value**
19 or younger	116	171	67.8	23	32	71.9	13	20	65.0	0.06	.806
20-24	123	216	56.9	38	48	79.2	24	28	85.7	0.59	p<.001
25-29	33	41	80.5	8	10	80.0	6	8	75.0	0.13	.756
30-34	4	8	50.0	3	6	50.0	2	5	40.0	0.19	.753
35-39	6	7	85.7	4	5	80.0	3	3	100.0	0.45	.347
40-49	4	4	100.0	2	2	100.0	2	2	100.0		
50 and above	4	5	80.0	2	2	100.0	1	1	100.0	0.49	

Note: Effect size and P-Value were generated utilizing "did not attend an SI session" and "attended two or more sessions" data.

STUDENT COMPLETION RATES

Similarly to success, students who attended a SI session one more times and two or more times were compared to students who did not attend SI. For completion rates (formally retention), students who attended two or more SI sessions did not have a statistically significant (p=.076) nor a substantially (ES=0.17) higher completion rate (97%) than students who did not attend SI (92.7%) (see Figure 3 and Table 3a). **Students who attended two or more SI sessions and were enrolled in the following courses: CD-105, HIST-100, and HIST-101, however, were statistically significantly (p<.05) and substantially (ES>0.20) more likely to complete their courses than students were enrolled in the same course and did not attend SI.**

Figure 3. Spring 2013 Transfer Prep SI Completion Rate by Number of Sessions Attended.

Table 3a. Spring 2013 Student **Completion Rates** by Number of Sessions Attended and by Course.

SI Course	Number of Sessions Attended									Effect Size (ES)	P-Value
	Did not attend an SI session			Attended one or more SI sessions			Attended two or more SI sessions				
	#	N	%	#	N	%	#	N	%		
CD-105	56	61	91.8	27	27	100.0	20	20	100.0	0.34	.023
ENGL-101	36	40	90.0	10	11	90.9	3	4	75.0	-0.47	.559
ENGL-102	23	25	92.0	1	1	100.0	1	1	100.0	0.29	
HIST-100	102	108	94.4	35	35	100.0	15	15	100.0	0.26	.013
HIST-101	112	119	94.1	16	16	100.0	14	14	100.0	0.26	.008
PSYCH-100	90	99	90.9	13	15	86.7	12	13	92.3	0.05	.865
Totals	**419**	**452**	**92.7**	**102**	**105**	**97.1**	**65**	**67**	**97.0**	**0.17**	**.076**

Note: This table includes some students that attended SI despite not being enrolled in a course where SI was offered and students who were enrolled in more than one SI course. Effect size and P-Value were generated utilizing "did not attend an SI session" and "attended two or more sessions" data.

Hispanic Students

Completion rates were also disaggregated by ethnicity and gender. Hispanic students who attended two or more SI sessions were statistically significantly ($p<.001$) and substantially (ES=0.30) more likely to complete their course sections (100%) than Hispanic students in the same section who did not participate in SI (92.6%)(see Figure 4 and Table 3b).
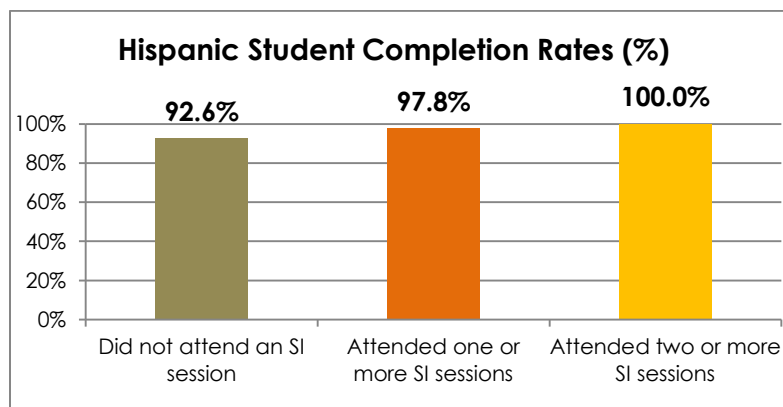
Gender

In contrast, the results indicate that gender was not related to student completion rates. Students who identified as female and male who attended two or more SI sessions were more likely to complete (97.9% females; 95% males) their course section in comparison to female and male students (93.8% females; 91.1% males) in the same section who did not attend SI, although the relationship was neither substantial nor statistically significant.

Age

Students who were 24 years-old and younger, and attended two or more SI sessions were statistically significantly ($p<.001$) and substantially (ES=0.32) more likely to complete their course than students who did not attend SI. Students in the 30-39 age category were also substantially (ES=0.45) more likely to complete their course, but the results were not statistically significant ($p>.05$). The sample size for students who were 24 years-old and younger was much greater than the other age categories.

Figure 4. Hispanic Student Completion Rates by Number of Sessions Attended.

Hispanic Student Completion Rates (%)

| | 92.6% | 97.8% | 100.0% |

Table 3b. Spring 2013 Student **Completion Rates** Disaggregated by Ethnicity and Gender.

Ethnicity	Did not attend an SI session			Attended one or more SI sessions			Attended two or more SI sessions			Effect Size (ES)	P-Value
	#	N	%	#	N	%	#	N	%		
Hispanic	162	175	92.6	45	46	97.8	29	29	100.0	0.30	p<.001
African American	26	29	89.7	12	12	100.0	7	7	100.0	0.37	.081
Asian	24	26	92.3	9	9	100.0	6	6	100.0	0.31	.159
Native American/Alaskan Native	11	11	100.0	1	1	100.0					
Caucasian	192	207	92.8	35	37	94.6	23	25	92.0	0.03	p<.001
Missing	4	4	100.0								
Total	**419**	**452**	**92.7**	**102**	**105**	**97.1**	**65**	**67**	**97.0**	**0.17**	**.076**
Gender	#	N	%	#	N	%	#	N	%	Effect Size (ES)	P-Value
Female	243	259	93.8	69	70	98.6	46	47	97.9	0.18	.121
Male	174	191	91.1	33	35	94.3	19	20	95.0	0.14	.472
Age	#	N	%	#	N	%	#	N	%	Effect Size (ES)	P-Value
19 or younger	160	171	93.6	32	32	100.0	20	20	100.0	0.28	.001
20-24	198	216	91.7	48	48	100.0	28	28	100.0	0.32	p<.001
25-29	40	41	97.6	10	10	100.0	8	8	100.0	0.17	.322
30-34	6	8	75.0	4	6	66.7	3	5	60.0	0.31	.621
35-39	6	7	85.7	4	5	80.0	3	3	100.0	0.45	.347
40-49	5	5	100.0	2	2	100.0	2	2	100.0		
50 and above	4	4	100.0	2	2	100.0	1	1	100.0		

Note: Effect size and P-Value were generated utilizing "did not attend an SI session" and "attended two or more sessions" data.