



**Academic Performance, Retention, and Graduation Comparisons:
SOAR versus non-SOAR Students**

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Executive Summary

Study 1 was conducted to investigate the influence of the Student Orientation, Advising and Registration (SOAR) Program on academic performance, retention and graduation rates. SOAR and non-SOAR participating students were selected from the fall 2008 and the fall 2009 cohorts at California State University, San Bernardino (CSUSB). Results indicate that SOAR participants consistently outperformed non-SOAR participants on indicators of academic performance during their first academic year while being retained at a higher rate in their second, third, and fourth academic years.

Study 2 was conducted to identify potential pre-existing differences, such as personal academic expectations, that may account for these results. To do so, analyses were conducted to compare the responses of SOAR participants and non-SOAR participants from the fall 2013 cohort on the Cooperative Institutional Research Program (CIRP) survey. The CIRP is administered to first-year students prior to the first day of classes at their new institution. The survey was designed to identify certain characteristics of incoming students, such as their academic preparedness, college expectations, values, goals, and admission decisions. Since the fall 2013 cohort took the CIRP survey, not the fall 2008 and fall 2009 cohorts, the fall 2013 cohort was used for these comparisons. Although SOAR was considered a requirement for the fall 2013 cohort, enough students did not participate to justify the comparisons. Results indicated that there were significant differences that may suggest a difference in the academic expectations and motivation of SOAR participants and non-SOAR participants.

Further analyses were conducted on the fall 2013 cohort to compare the effectiveness of SOAR session type (overnight vs. non-overnight). Specifically, the academic performance, retention rates, and CIRP responses of overnight SOAR participants and non-overnight SOAR participants were compared. While there were no significant differences in academic performance based on session type, overnight SOAR participants were more likely to be retained for their second term. In addition, there were significant differences in CIRP responses based on session participation that may point to pre-existing differences between overnight SOAR participants and non-overnight SOAR participants.

Study 1

The CSUSB Office of Institutional Research examined differences in academic performance and retention and graduation rates between students who participated in the Student Orientation, Advising and Registration (SOAR) Program and students who did not participate. The initial student sample consisted of a total of 1,968 first-time freshmen students who entered CSUSB in fall 2008 and 2,017 first-time freshman students who entered CSUSB in fall 2009.

Case control matching was utilized to control for pre-existing differences between SOAR participants and non-SOAR participants for the fall 2008 and fall 2009 cohorts. Specifically, students were matched on their gender, high school grade point average (GPA), SAT scores, English remediation status (yes/no), math remediation status (yes/no), and ethnicity. All non-resident students were omitted due to our inability to match on SAT and high school GPA scores. In addition, the non-resident group contained unequal gender distributions. The final student sample from fall 2008 consisted of 155 first-time freshman SOAR participants matched to 155 first-time freshmen non-SOAR participants. The final student sample from fall 2009 consisted of 91 first-time freshman SOAR participants matched to 91 first-time freshmen non-SOAR participants. Analyses confirmed that the groups were successfully matched, as there were no significant differences between groups.

Academic Performance

SOAR participants were compared to non-SOAR participants from the fall 2008 and the fall 2009 cohorts on indicators of academic performance. The results indicate that SOAR participants consistently outperformed non-SOAR participants on indicators of academic performance during their first year at

CSUSB. Specifically, SOAR participants attempted significantly more total course units during their first academic year than non-SOAR participants in both the fall 2008 (41.8 vs. 38.3) and the fall 2009 (40.2 vs. 36.4) cohorts. Consequently, SOAR participants in the fall 2009 cohort attempted significantly more total courses in their first year than non-SOAR participants (11.12 vs 9.91). In addition, SOAR participants from the fall 2008 cohort completed a significantly higher percentage of their total courses than non-SOAR participants (84% vs. 77%). Finally, SOAR participants from both the fall 2008 and the fall 2009 cohorts attempted significantly more GE courses (7.4 and 6.6) than non-SOAR participants (6.4 and 6.2) in their first academic year, with SOAR participants in the fall 2008 cohort demonstrating a significantly higher completion rate than non-SOAR participants (85% vs. 77%) in such courses.

After combining the two cohorts, several of these trends remained. Specifically, SOAR participants attempted more total units than non-SOAR participants in their first year (41.5 vs. 37.7). In addition, SOAR participants successfully completed a higher percentage of their total courses than non-SOAR participants (86% vs. 79%). Furthermore, SOAR participants demonstrated an ability to fulfill the general education requirements at CSUSB. Accordingly, SOAR participants enrolled in more GE courses during their first year than non-SOAR participants (7.1 vs. 6.2), while completing a higher percentage of such courses (85% vs. 79%).

Table 1. Comparisons of Academic Performance between SOAR and non-SOAR Participants

Term	SOAR Participation	1 st Term GPA	1 st Year:				
			Total Units Attempted	# Total Courses Attempted	% Total Courses Completed	# GE Courses Attempted	% GE Courses Completed
Fall 2008	SOAR	2.69	41.8*	11.59	84%*	7.4*	85%*
	Non-SOAR	2.51	38.3	11.03	77%	6.4	77%
Fall 2009	SOAR	2.63	40.2*	11.12*	88%	6.6*	86%
	Non-SOAR	2.53	36.4	9.91	82%	5.8	82%
Total	SOAR	2.67	41.5*	11.4	86%*	7.1*	85%*
	Non-SOAR	2.52	37.7	10.6	79%	6.2	79%

*Significant at the $p < .05$ level.

Retention and Graduation Rates

Analyses were conducted to identify significant differences between SOAR and non-SOAR participants in terms of retention and graduation rates. Although the results for the fall 2009 cohort displayed no significant differences in second-, third-, or fourth-year retention rates, SOAR participants from the fall 2008 cohort were consistently retained at a higher rate. Specifically, a higher percentage of SOAR participants from the fall 2008 cohort were retained into their second (86% vs. 76%), third (70% vs. 56%), and fourth (60% vs. 47%) academic years than non-SOAR participants from the fall 2008 cohort. While neither cohort displayed significant differences in the four-year graduation rates of SOAR participants and non-SOAR participants, SOAR participants demonstrated a higher total graduation rate. Overall, SOAR participants in the fall 2008 cohort graduated at a higher rate than non-SOAR participants (47% vs. 35%). This trend remained after the cohorts were combined (40% vs. 30%).

Table 2. Retention and Graduation Rate Comparisons for SOAR and no-SOAR Participants

Cohort	SOAR Participation	Students	Retention Rates						Graduation Rates			
			2nd Year		3rd Year		4th Year		4th Year		Total	
Fall 2008	SOAR	155	133	86%*	108	70%*	93	60%*	15	10%	73	47%*
	Non-SOAR	155	118	76%	87	56%	73	47%	7	5%	54	35%
Fall 2009	SOAR	91	73	80%	63	69%	57	63%	4	4%	25	28%
	Non-SOAR	91	68	75%	54	59%	47	52%	5	6%	19	21%
Total	SOAR	246	206	84%*	171	70%*	150	61%*	20	8%	98	40%*
	Non-SOAR	246	186	76%	141	57%	120	49%	12	5%	73	30%

*Significant at the $p < .05$ level.

Study 2

In an attempt to identify any potential pre-existing differences between SOAR participants and non-SOAR participants that may influence the results seen in the above analyses, case control matching was utilized to compare the responses between SOAR attendees ($n = 34$) and non-SOAR attendees ($n = 34$) from the fall 2013 cohort on the Cooperative Institutional Research Program (CIRP) survey. Specifically, students were matched on their gender, ethnicity, high school GPA, math remediation status, English remediation status, and SAT score. The fall 2013 cohort was used for these analyses because students in that cohort took the CIRP, while students in the fall 2008 and the fall 2009 cohorts did not.

The results of these comparisons highlighted several intriguing differences in the responses of SOAR participants and non-SOAR participants (see Table 3). Specifically, SOAR participants had a higher average score on the college reputation orientation scale than non-SOAR participants. As a result, it can be inferred that SOAR participants put more thought into their educational decisions than non-SOAR participants, as this scale was designed to measure the amount of consideration of the academic reputation of an academic institution and the future career potential of its graduates during the college selection process. In addition, it appears that SOAR participants may be more motivated to be successful academically, as more SOAR participants indicated that they had aspirations for an education beyond a bachelor's degree ($n=13$) than non-SOAR participants ($n=6$). Finally, SOAR participants were significantly older (18.2) than non-SOAR participants (17.9). While some of the noted differences were not statistically significant, they should not be disregarded, as they approached significance while using a relatively small sample size.

Table 3. CIRP Responses: SOAR participants vs, non-SOAR participants

SOAR Participation	CIRP Responses		
	College Reputation Orientation (CROS)	Age	Aspire to Degree beyond a Bachelors
	Average		Count
SOAR	48.9	18.2*	13
Non-SOAR	45.1	17.9	6

*Significant at the $p < .05$ level.

Overnight versus Non-Overnight Comparisons

Finally, analyses were conducted on the fall 2013 cohort to investigate the influence that SOAR session type may have on the academic performance of students. Accordingly, case control matching was utilized to control for pre-existing differences between SOAR participants who attended overnight sessions ($n = 663$) and SOAR participants who attended non-overnight sessions ($n = 663$). Specifically, students were matched on their gender, ethnicity, high school GPA, math remediation status, English remediation status, and SAT score.

Analyses were conducted to compare overnight participants versus non-overnight participants on first-quarter GPA, total number of courses enrolled in the first quarter, percentage of courses completed during the first quarter, number of general education courses enrolled in the first quarter, percentage of general education courses completed in the first quarter, and second quarter retention rate. The results of these analyses indicate that there were few differences in the academic performance of fall 2013 overnight and non-overnight SOAR participants during their first quarter at CSUSB. However, overnight SOAR attendees were significantly more likely to remain enrolled for their second quarter than non-overnight attendees (98% vs. 96%).

Once again, CIRP responses were used to identify potential pre-existing differences between the matched samples (Table 4). When comparing the CIRP responses, overnight SOAR attendees demonstrated significantly higher scores on the college involvement scale (50.42 vs. 48.39) than non-overnight SOAR attendees. This would indicate that overnight SOAR participants were more likely to be involved at CSUSB than non-overnight SOAR participants, as the college involvement scale was designed to measure the extent to which students expect to be involved in college-based activities such as study abroad programs, community service groups, and other clubs and groups. In addition, overnight SOAR participants scored higher on the social agency scale than non-overnight attendees (52.60 vs. 50.94). This would suggest that overnight participants are more likely to value political and social involvement than non-overnight SOAR participants. Finally, more overnight SOAR attendees lived on campus during their first quarter than non-overnight SOAR attendees (20% vs. 10%).

Table 4. Overnight versus non-Overnight Comparisons

SOAR Session	Fall 2013 Academic Comparisons						CIRP Responses		
	1st Term GPA	2 nd Term Retention	Enrolled		Completed		College IN Score	Social Agency Score	% Living On-Campus
			# Total Courses	# GE Courses	% Total Courses	% GE Courses			
ON	2.38	98%*	4.0	2.3	82%	93%	50.42*	52.60*	20%*
Non-ON	2.34	96%	3.9	2.3	83%	91%	48.39	50.94	10%

Note. ON = overnight. IN = Involvement.

*Significant at the $p < .05$ level.

Discussion

In summary, the initial comparisons of SOAR participants versus non-SOAR participants conducted in study one yield favorable results which provide support for the implementation of the SOAR program at CSUSB. The observed outcomes of the SOAR program include the superior academic performance and retention rates of participants.

In study two, an attempt was made to identify pre-existing differences between SOAR participant and non-SOAR participants that may account for the results found in study one by analyzing responses on the CIRP. In a comparison of students from the fall 2013 cohort, SOAR participants were found to be older and more likely to aspire to a degree beyond a bachelors, while scoring higher on the college reputation orientation scale than non-SOAR participants. These differences represent potential

alternative explanations for the differences in the academic performance and retention rates of SOAR participants and non-SOAR participants. While these results were not all statistically significant, they should be considered, as they approach significance while using a relatively small sample size.

Following comparisons based on SOAR participation, analyses were conducted to determine if there were any differences in academic performance, retention rates, or CIRP responses based on SOAR session type (overnight vs. non-overnight). The results indicated that overnight SOAR participants were retained at a significantly higher rate in their second quarter than non-overnight SOAR participants. In addition, overnight SOAR participants had a higher average college involvement score and social agency score, while being more likely to live on campus than non-overnight SOAR participants.

In summary, while results suggest that SOAR participants outperform non-SOAR participants academically while being retained at a higher rate, these results should be interpreted with caution due to potential pre-existing differences identified using responses on the CIRP survey. In addition, the effectiveness of SOAR does not appear to differ based on session type, as there were few differences in the academic performance or retention rates of SOAR participants from the overnight or non-overnight sessions.