



Research Brief

SBCCD Distance Education Success and Completion Rates from 2008 – 2009 to 2012 – 2013

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Purpose of Brief

The following brief illustrates the number of sections, grades on record (GOR) earned, and the success and completion rates for SBCCD courses from 2008 – 2009 to 2012 – 2013 by instructional method. In addition, student performance in lecture and online courses are compared while controlling for term, course, and instructor.

Summary of Findings

- The number of sections has declined overall while notably increasing in laboratory and independent study sections.
- The number of online sections (i.e. internet only and hybrid sections) has decreased from 438 in 2008 – 2009 to 379 in 2012 – 2013, a decrease of 59 (13%).
- The number of grades on record (GOR) in online courses (i.e. internet only and hybrid sections) has increased from 11,261 in 2008 – 2009 to 11,947 in 2012 – 2013, a 6% increase (686).
- The completion rate (formally retention) in online courses (i.e. internet only and hybrid sections) has increased from 80% in 2008 – 2009 to 85% in 2012 – 2013, a 6% increase (.849-.801/.801).
- When controlling for term, course, and instructor the overall five year success rate is slightly higher in lecture (67.1%) than in online (64.1%) sections.

Findings

Table 1 illustrates the number and percent of sections by instructional method from 2008 – 2009 to 2012- 2013 in sections where a grade on record (GOR) was earned. The proportion of lecture only, lab only, lecture/lab sections, and online (i.e. internet and hybrid) sections have remained relatively the same in the last five years. However, the number of sections has declined for every instructional method except for hybrid and independent study sections. Specifically, the number of hybrid sections has increased from 117 in 2008 – 2009 to 135 in 2012 – 2013, an increase of 18 (15%). The number of internet only sections has decreased from 321 in 2008 – 2009 to 244 in 2012-2013, a decrease of 77 (24%).

Table 1: Number and Percent of Sections by Instructional Method from 2008 – 2009 to 2012 – 2013 for Sections where a Grade on Record was Earned.

Instructional Method	2008-2009		2009-2010		2010-2011		2011-2012		2012-2013	
	#	%	#	%	#	%	#	%	#	%
Lecture Only	2,615	54.5	2,348	54.9	2,194	55.7	1,908	55.5	1,870	55.2
Lab Only	395	8.2	371	8.7	346	8.8	290	8.4	301	8.9
Internet Only	321	6.7	303	7.1	280	7.1	235	6.8	244	7.2
Hybrid	117	2.4	125	2.9	125	3.2	142	4.1	135	4.0
Lecture/Lab	1,063	22.2	985	23.0	919	23.3	779	22.6	753	22.2
Work Experience	172	3.6	73	1.7	20	0.5	19	0.6	20	0.6
Independent Study	20	0.4	19	0.4	18	0.5	18	0.5	33	1.0
Field Experience	5	0.1	5	0.1	6	0.2	4	0.1	4	0.1
Clinical	26	0.5	23	0.5	22	0.6	22	0.6	19	0.6
Tutoring	9	0.2	1	0.0	2	0.1	13	0.4	0	0.0
Two way video/audio	4	0.1	4	0.1	6	0.2	10	0.3	9	0.3
One-Way Video	52	1.1	21	0.5	0	0.0	0	0.0	0	0.0
Total	4,799	100.0	4,278	100.0	3,938	100.0	3,440	100.0	3,388	100.0

Note: The sections where students did not earn a GOR are excluded from this table; accordingly, the number of sections displayed in Table 1 will be lower than the actual number of sections offered by CHC.

The number of GOR in both internet only and hybrid sections has increased from 11,261 in 2008 – 2009 to 11,947 in 2012 – 2013, a 6% increase (see Tables 2 and 3). In contrast, GOR in lecture only sections have had a 15% decrease from 2008 – 2009 to 2012 – 2013. Equally important, the success rate in all types of distance education sections has slightly increased from 61% in 2008 – 2009 to 62% in 2012 – 2013 (see Figure 1). Moreover, hybrid sections have a consistently higher success rate than internet only sections. **A limitation to comparing student performance in hybrid and internet sections is that the comparison does not control for term, course, and instructor.**

Figure 1: SBCCD Internet Only and Hybrid Success Rates from 2008 – 2009 to 2012 – 2013.

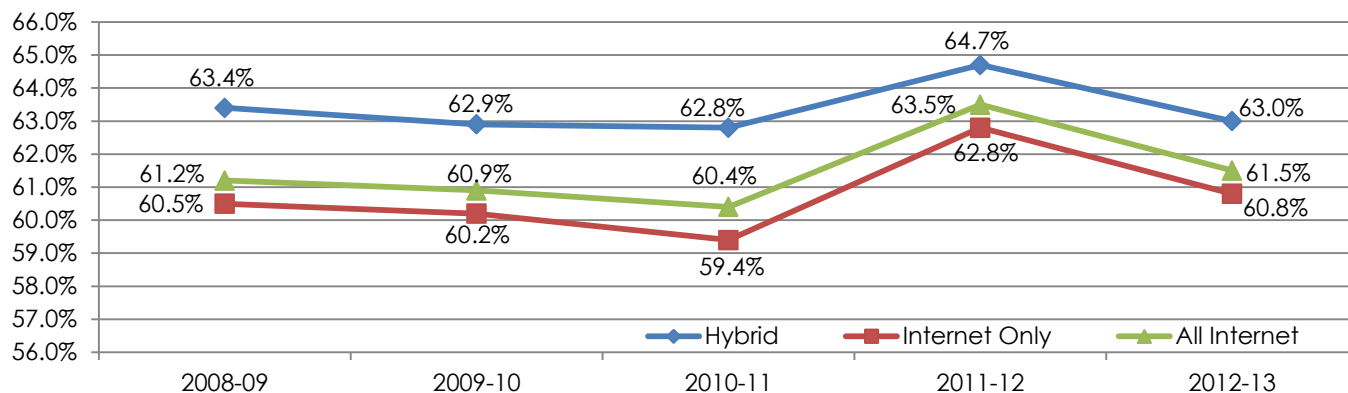


Table 2: SBCCD Success Rate by Instructional Method from 2008 – 2009 to 2012 – 2013.

Instructional Method	2008 – 2009			2009 – 2010			2010 – 2011			2011 – 2012			2012 – 2013		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Lecture Only	50,794	74,884	67.8	51,240	77,047	66.5	50,125	74,188	67.6	45,286	64,498	70.2	44,675	63,561	70.3
Lab Only	6,586	8,473	77.7	7,033	9,094	77.3	6,940	8,909	77.9	6,182	7,570	81.7	6,110	7,583	80.6
Internet Only	5,172	8,554	60.5	5,531	9,191	60.2	5,087	8,565	59.4	4,457	7,101	62.8	4,843	7,963	60.8
Hybrid	1,716	2,707	63.4	2,083	3,310	62.9	2,226	3,542	62.8	2,573	3,977	64.7	2,510	3,984	63.0
Lecture/Lab	15,056	20,258	74.3	15,374	21,039	73.1	14,370	20,088	71.5	12,315	16,745	73.5	12,111	16,428	73.7
Work Experience	660	985	67.0	279	418	66.7	174	236	73.7	155	200	77.5	194	262	74.1
Independent Study	42	53	79.2	68	85	80.0	73	83	88.0	61	74	82.4	85	97	87.6
Field Experience	68	71	95.8	46	52	88.5	47	55	85.5	19	27	70.4	16	20	80.0
Clinical	534	762	70.1	463	633	73.1	427	560	76.3	428	514	83.3	382	481	79.4
Tutoring	0	22	0.0	0	5	0.0	117	193	60.6	31	67	46.3			
Two-Way Video/Audio	47	50	94.0	28	57	49.1	15	32	46.9	53	88	60.2	40	53	75.5
One-Way Video	950	1,662	57.2	469	950	49.4									
Total	81,625	118,481	68.9	82,614	121,881	67.8	79,601	116,451	68.4	71,560	100,861	70.9	70,966	100,432	70.7

Note. The blue font refers to distance education sections, "#" refers to the number of successful grades, "N" refers to the number of GOR, and "%" is # divided by N.

Table 3: SBCCD Completion Rate by Instructional Method from 2008 – 2009 to 2012 – 2013.

Instructional Method	2008 – 2009			2009 – 2010			2010 – 2011			2011 – 2012			2012 – 2013		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Lecture Only	64,101	74,884	85.6	65,619	77,047	85.2	63,517	74,188	85.6	56,485	64,498	87.6	57,468	63,561	90.4
Lab Only	7,483	8,473	88.3	8,019	9,094	88.2	7,898	8,909	88.7	6,889	7,570	91.0	6,963	7,583	91.8
Internet Only	6,785	8,554	79.3	7,414	9,191	80.7	6,816	8,565	79.6	5,855	7,101	82.5	6,712	7,963	84.3
Hybrid	2,239	2,707	82.7	2,740	3,310	82.8	2,918	3,542	82.4	3,367	3,977	84.7	3,430	3,984	86.1
Lecture/Lab	17,596	20,258	86.9	18,125	21,039	86.1	17,127	20,088	85.3	14,457	16,745	86.3	14,673	16,428	89.3
Work Experience	775	985	78.7	321	418	76.8	219	236	92.8	189	200	94.5	249	262	95.0
Independent Study	45	53	84.9	74	85	87.1	80	83	96.4	70	74	94.6	92	97	94.8
Field Experience	71	71	100.0	50	52	96.2	53	55	96.4	26	27	96.3	20	20	100.0
Clinical	653	762	85.7	512	633	80.9	450	560	80.4	454	514	88.3	406	481	84.4
Tutoring	0	22	0.0	0	5	0.0	186	193	96.4	36	67	53.7			
Two-Way Video/Audio	48	50	96.0	45	57	78.9	24	32	75.0	69	88	78.4	46	53	86.8
One-Way Video	1,283	1,662	77.2	777	950	81.8									
Total	101,079	118,481	85.3	103,696	121,881	85.1	99,288	116,451	85.3	87,897	100,861	87.1	90,059	100,432	89.7

Note. The blue font refers to distance education sections, "#" refers to the number of retained students, "N" refers to the number of GOR, and "%" is # divided by N.

Figure 2 and Table 4 indicate that when controlling for term, course, and instructor the overall five year success rate for lecture sections (67%) is slightly higher (ES = .06) than for online sections (64%). However, in 2012-2013, students in lecture courses were substantially (ES = .22) and statistically significantly ($p < .001$) more likely to successfully complete the course (70%) than students in online sections (60%) taught by the same instructor in the same semester. Similarly, students in lecture courses were substantially (ES = .24) and statistically significantly ($p < .001$) more likely to complete the course (91%) than students in an online course (83%) taught by the same instructor in the same semester. **A limitation of these findings is that not all online courses are included in the comparison because many of the online instructors did not teach the same lecture course in the same term in which they taught the online course.**

Figure 2: SBCCD Success Rates from 2008 – 2009 to 2012 – 2013 by Lecture and Online Sections taught by the Same Instructor in the Same Semester.

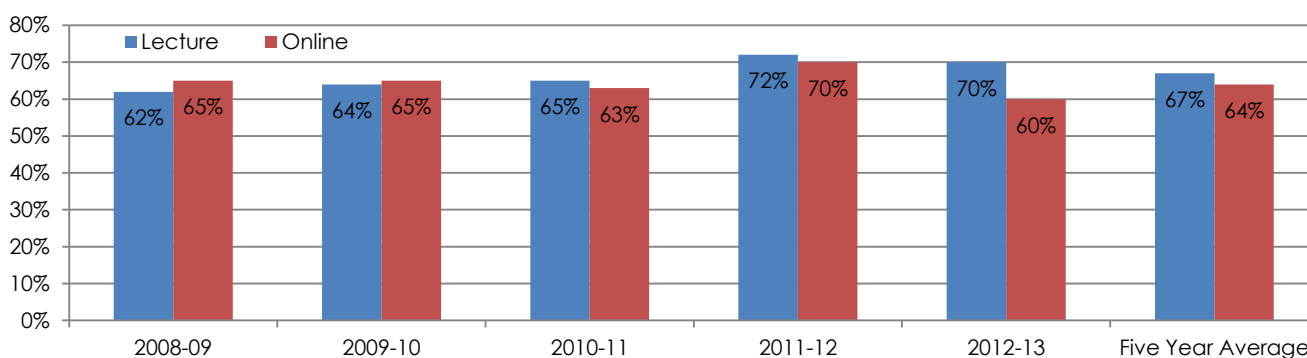


Table 4: SBCCD Success and Completion Rates from 2008 – 2009 to 2012 – 2013, Effect Sizes, and P-Values by Lecture and Online Sections taught by the Same Instructor in the Same Semester.

Academic Year	Lecture Course			Distance Education Course			ES*	P-Value**
	#	N	%	#	N	%		
Success								
2008 – 2009	1,006	1,623	62.0	982	1,520	64.6	.05	.128
2009 – 2010	1,227	1,920	63.9	1,014	1,554	65.3	.03	.410
2010 – 2011	1,612	2,471	65.2	1,191	1,881	63.3	-.04	.191
2011 – 2012	1,325	1,834	72.2	999	1,420	70.4	-.04	.237
2012 – 2013	2,535	3,629	69.9	1,319	2,211	59.7	-0.22	< .001***
Five Year Average	7,705	11,477	67.1	5,505	8,586	64.1	-0.06	< .001***
Completion								
2008 – 2009	1,378	1,623	84.9	1,216	1,520	80.0	-.13	< .001***
2009 – 2010	1,626	1,920	84.7	1,278	1,554	82.2	-.07	.054
2010 – 2011	2,132	2,471	86.3	1,505	1,881	80.0	-.17	< .001***
2011 – 2012	1,624	1,834	88.5	1,215	1,420	85.6	-.09	.012***
2012 – 2013	3,310	3,629	91.2	1,843	2,211	83.4	-0.24	< .001***
Five Year Average	10,070	11,477	87.7	7,057	8,586	82.2	-0.16	< .001***

* A .20 effect size corresponds to a Pearson r of .10. The effect size represents the magnitude of the difference between the target and the baseline measure. Using an effect size increases the likelihood that the difference is not only statistically significant but practical as well.

**The P-Value is an indication of statistical significance. Statistical significance exists when the P-value is less than .05 indicating that the difference between the groups is likely to be due to chance only 5 out of 100 times. It is important to note that the p-value is influenced by the number of cases.

***The difference is statistically significant.

Methodology

Table 1 illustrates the number and percent of sections by instructional method from 2008 – 2009 to 2012 – 2013 for sections where a GOR was earned. It is important to note that sections where students did not earn a GOR are excluded from this table. Accordingly, the number of sections displayed in Table 1 will be lower than the actual number of sections offered by the District Colleges.

Tables 2 and 3 display the success and completion rates for SBCCD by instruction method from 2008 – 2009 to 2012 – 2013. There are twelve methods of instruction identified in Tables 2 and 3: lecture only, lab only, internet only, hybrid (a combination of internet and another instructional method—usually lecture), lecture/lab, work experience, independent study, field experience, clinical, tutoring, two-way interactive video and audio, and one-way video. The work experience, independent study, field experience, clinical, tutoring, and one-way video instructional methods also may have included other instructional methods that were combined with these methods. **The internet and hybrid instruction methods are the methods often referred to as distance education or online courses.**

When examining the success and completion rates (formally retention) illustrated in Tables 2 and 3 it is essential **to not compare** the success and completion rates of different instructional methods because each method does not control for instructor and discipline and could be misleading. Comparing the success and completion rates longitudinally is more methodologically sound. In addition, a second more methodologically sound method than comparing across instructional methods is to compare success and completion rates while controlling for instructor, term, and course. Accordingly, Figure 2 and Table 4 illustrate the results of comparing lecture to distance education sections for the same term, course, and instructor. Specifically, if an instructor taught both an online and lecture course within the same term, the performance of students in each of these courses was compared.

Definitions: The number of grades on record (GOR) refers to one of the following grades and is also the number of students enrolled at census: A, B, C, D, F, P (CR), NP (NC), I, or W. Success rate is the number of A, B, C, or P grades divided by the number of GOR, and completion rate (formally retention rate) is the number of A, B, C, D, F, P, NP, or I grades divided by the number of GOR.

Effect Size and Statistical Significance. The effect size statistic is commonly used in meta-analyses. A meta-analysis uses quantitative techniques to summarize the findings from a number of studies on a particular topic to determine the average effect of a given technique. One method of interpreting effect size was developed by Jacob Cohen. Jacob Cohen defined "small," "medium," and "large" effect sizes. He explained that an effect size of .20 can be considered small, an effect size of .50 can be considered medium, and an effect size of .80 can be considered large. Effect size is calculated by dividing the difference of the two means by the pooled standard deviation. It is important to mention that the number of students in each group does not influence Effect Size; whereas, when statistical significance is calculated the number of students in each group does influence the significance level (i.e. "p" value being lower than .05). Accordingly, using Cohen as a guide, a substantial effect would be .20 or higher.