



Prepared by:  
Keith Wurtz

RRN  
602

**Research Briefs from the CHC Office of Institutional Research  
SBCCD Distance Education Success and Completion Rates  
2007 – 2008 to 2011 – 2012**

**Overview:** The following brief illustrates the number of sections and grades on record earned (GOR), and the success and completion rates for courses in the San Bernardino Community College District (SBCCD) from 2007 – 2008 to 2011 – 2012 by instruction method. In addition, student performance in lecture courses is compared to student performance in online courses while controlling for term, instructor, and course.

**Summary of Findings:**

- The number of sections has declined for every instructional method except for online and tutoring sections.
- The number of online sections has increased from 339 in 2007 – 2008 to 377 in 2011 – 2012, an increase of 38 (11%).
- The number of grades on record (GOR) in online courses (i.e. internet only and hybrid sessions) has increased from 8,252 in 2007 – 2008 to 11,078 in 2011 – 2012, a 34% increase  $(11,078 - 8,252 / 8,252)$ .
- The success rate in online courses (i.e. internet only and hybrid) has increased from 59% in 2007 – 2008 to 64% in 2011 – 2012, a 9% increase  $(.635 - .585 / .585)$ .
- The completion rate (formally retention) in online courses (i.e. internet only and hybrid) has increased from 80% in 2007 – 2008 to 83% in 2011 – 2012, a 5% increase  $(.832 - .795 / .795)$ .
- When controlling for term, course, and instructor the overall five year success rate is the same for both lecture (65.4%) and online (65.3%) sections.

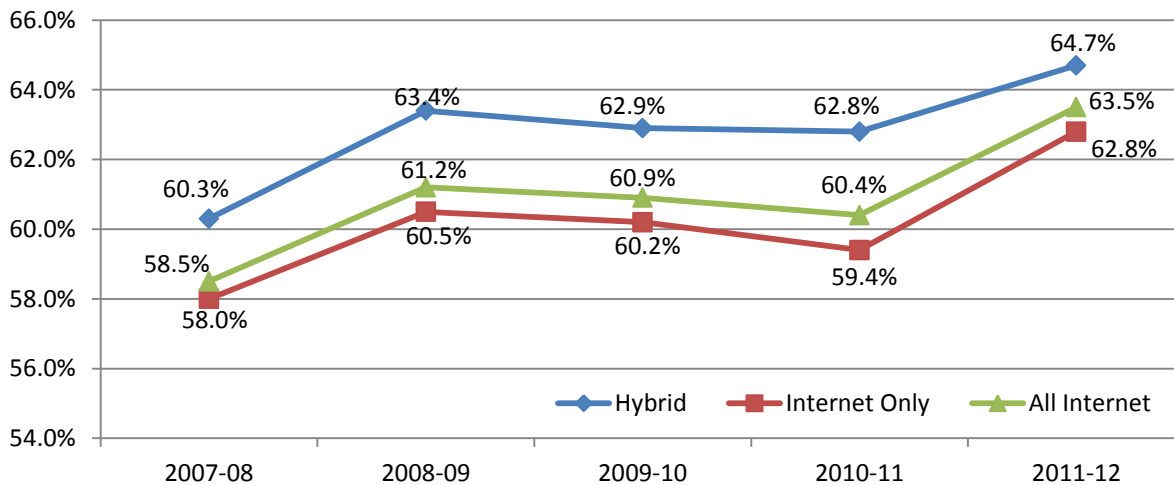
**Findings:** Table 1 illustrates the number and percent of sections by instructional method from 2007 – 2008 to 2011- 2012 in sections where a grade on record was earned (GOR). The proportion of lecture only, lab only, lecture/lab sections, and online (i.e. internet and hybrid) sections have remained relatively the same in the last five years. However, the number of sections has declined for every instructional method except for online and tutoring sections. Specifically, the number of online sections has increased from 339 in 2007 – 2008 to 377 in 2011 – 2012, an increase of 38 (11%).

**Table 1: Number and Percent of Sections by Instructional Method from 2007 – 2008 to 2011 – 2012 for Sections where a Grade on Record was Earned.**

Instructional Method	20072008		20082009		20092010		20102011		20112012	
	#	%	#	%	#	%	#	%	#	%
Lecture Only	2,607	55.9	2,615	54.5	2348	54.9	2,194	55.7	1,908	55.5
Lab Only	384	8.2	395	8.2	371	8.7	346	8.8	290	8.4
Internet Only	244	5.2	321	6.7	303	7.1	280	7.1	235	6.8
Hybrid	95	2.0	117	2.4	125	2.9	125	3.2	142	4.1
Lecture/Lab	1,036	22.2	1,063	22.2	985	23.0	919	23.3	779	22.6
Work Experience	163	3.5	172	3.6	73	1.7	20	0.5	19	0.6
Independent Study	28	0.6	20	0.4	19	0.4	18	0.5	18	0.5
Field Experience	9	0.2	5	0.1	5	0.1	6	0.2	4	0.1
Clinical	24	0.5	26	0.5	23	0.5	22	0.6	22	0.6
Tutoring	8	0.2	9	0.2	1	0.0	2	0.1	13	0.4
Two way video/audio	8	0.2	4	0.1	4	0.1	6	0.2	10	0.3
One-Way Video	55	1.2	52	1.1	21	0.5	0	0.0	0	0.0
Total	4,661	100.0	4,799	100.0	4,278	100.0	3,938	100.0	3,440	100.0

The number of GOR in both internet only and hybrid sessions has increased from 8,252 in 2006 – 2007 to 11,078 in 2011 – 2012, a 34% increase (see Figure 1 and Tables 2 and 3). In contrast, GOR in lecture only sessions have had a 6% decrease from 2007 – 2008 to 2011 – 2012. Equally important, the success rate in all types of internet sessions has increased from 59.0% in 2007 – 2008 to 64% in 2011 – 2012. Moreover, hybrid sessions have a consistently higher success rate than internet only sessions. 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 2007 – 2008 to 2011 – 2012.**



**Table 2: SBCCD Success Rate by Instructional Method from 2007 – 2008 to 2011 – 2012.**

Instruction Method	2007 – 2008			2008 – 2009			2009 – 2010			2010 – 2011			2011 – 2012		
	Success	GOR	S.R.	Success	GOR	S.R.	Success	GOR	S.R.	Success	GOR	S.R.	Success	GOR	S.R.
Lecture Only	45,145	68,877	65.5	50,794	74,884	67.8	51,240	77,047	66.5	50,125	74,188	67.6	45,286	64,498	70.2
Lab Only	5,453	7,259	75.1	6,586	8,473	77.7	7,033	9,094	77.3	6,940	8,909	77.9	6,182	7,570	81.7
<b>Internet Only</b>	3,602	6,213	58.0	5,172	8,554	60.5	5,531	9,191	60.2	5,087	8,565	59.4	4,457	7,101	62.8
<b>Hybrid</b>	1,229	2,039	60.3	1,716	2,707	63.4	2,083	3,310	62.9	2,226	3,542	62.8	2,573	3,977	64.7
Lecture/Lab	13,724	18,927	72.5	15,056	20,258	74.3	15,374	21,039	73.1	14,370	20,088	71.5	12,315	16,745	73.5
Work Experience	697	1,149	60.7	660	985	67.0	279	418	66.7	174	236	73.7	155	200	77.5
Independent Study	80	89	89.9	42	53	79.2	68	85	80.0	73	83	88.0	61	74	82.4
Field Experience	88	92	95.7	68	71	95.8	46	52	88.5	47	55	85.5	19	27	70.4
Clinical	450	680	66.2	534	762	70.1	463	633	73.1	427	560	76.3	428	514	83.3
Tutoring	0	42	0.0	0	22	0.0	0	5	0.0	117	193	60.6	31	67	46.3
Two way interactive video and audio	71	97	73.2	47	50	94.0	28	57	49.1	15	32	46.9	53	88	60.2
One-Way Video	913	1,563	58.4	950	1,662	57.2	469	950	49.4						
<b>Total</b>	<b>71,452</b>	<b>107,027</b>	<b>66.8</b>	<b>81,625</b>	<b>118,481</b>	<b>68.9</b>	<b>82,614</b>	<b>121,881</b>	<b>67.8</b>	<b>79,601</b>	<b>116,451</b>	<b>68.4</b>	<b>71,560</b>	<b>100,861</b>	<b>70.9</b>

Note. The **blue** font refers to distance education sessions, "Success" refers to the number of successful grades (i.e. A, B, C, or P), GOR refers to the number of students who earned one of the following grades: A, B, C, D, F, P, NP, I, or W (i.e. enrolled at census), and "S.R." is the success rate or the percent of students who successfully completed the course with an A, B, C, or P grade ("Success" divided by "GOR").

**Table 3: SBCCD Completion Rate by Instructional Method from 2007 – 2008 to 2011 – 2012.**

Instruction Method	2007 – 2008			2008 – 2009			2009 – 2010			2010 – 2011			2011 – 2012		
	Completed	GOR	C.R.	Completed	GOR	C.R.	Completed	GOR	C.R.	Completed	GOR	C.R.	Completed	GOR	C.R.
Lecture Only	57,913	68,877	84.1	64,101	74,884	85.6	65,619	77,047	85.2	63,517	74,188	85.6	56,485	64,498	87.6
Lab Only	6,263	7,259	86.3	7,483	8,473	88.3	8,019	9,094	88.2	7,898	8,909	88.7	6,889	7,570	91.0
<b>Internet Only</b>	4,912	6,213	79.1	6,785	8,554	79.3	7,414	9,191	80.7	6,816	8,565	79.6	5,855	7,101	82.5
<b>Hybrid</b>	1,651	2,039	81.0	2,239	2,707	82.7	2,740	3,310	82.8	2,918	3,542	82.4	3,367	3,977	84.7
Lecture/Lab	16,383	18,927	86.6	17,596	20,258	86.9	18,125	21,039	86.1	17,127	20,088	85.3	14,457	16,745	86.3
Work Experience	842	1,149	73.3	775	985	78.7	321	418	76.8	219	236	92.8	189	200	94.5
Independent Study	82	89	92.1	45	53	84.9	74	85	87.1	80	83	96.4	70	74	94.6
Field Experience	92	92	100.0	71	71	100.0	50	52	96.2	53	55	96.4	26	27	96.3
Clinical	531	680	78.1	653	762	85.7	512	633	80.9	450	560	80.4	454	514	88.3
Tutoring	0	42	0.0	0	22	0.0	0	5	0.0	186	193	96.4	36	67	53.7
Two way interactive video and audio	80	97	82.5	48	50	96.0	45	57	78.9	24	32	75.0	69	88	78.4
One-Way Video	1,239	1,563	79.3	1,283	1,662	77.2	777	950	81.8						
<b>Total</b>	<b>89,988</b>	<b>107,027</b>	<b>84.1</b>	<b>101,079</b>	<b>118,481</b>	<b>85.3</b>	<b>103,696</b>	<b>121,881</b>	<b>85.1</b>	<b>99,288</b>	<b>116,451</b>	<b>85.3</b>	<b>87,897</b>	<b>100,861</b>	<b>87.1</b>

Note. The **blue** font refers to distance education sessions, "Completed" refers to the number of students who completed the course (i.e. A, B, C, D, F, I, NP, or P), GOR refers to the number of students who earned one of the following grades: A, B, C, D, F, P, NP, I, or W (i.e. enrolled at census), and "C.R." is the completion rate or the percent of students who completed the course with an A, B, C, D, F, I, NP, or P grade ("Completed" divided by "GOR").

Figure 2 and Table 4 indicate that when controlling for term, course, and instructor the overall five year success rate for lecture (65.4%) and online sections (65.3%) is the same for both types of sections. Equally important, none of the differences in success rate are statistically or substantially different from one another (see Table 3). On the other hand, students in lecture courses were statistically significantly ( $p < .001$ ) more likely to complete the course than students in an online course 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 2007 – 2008 to 2011 – 2012 by Lecture and Online Sections taught by the Same Instructor in the Same Semester.

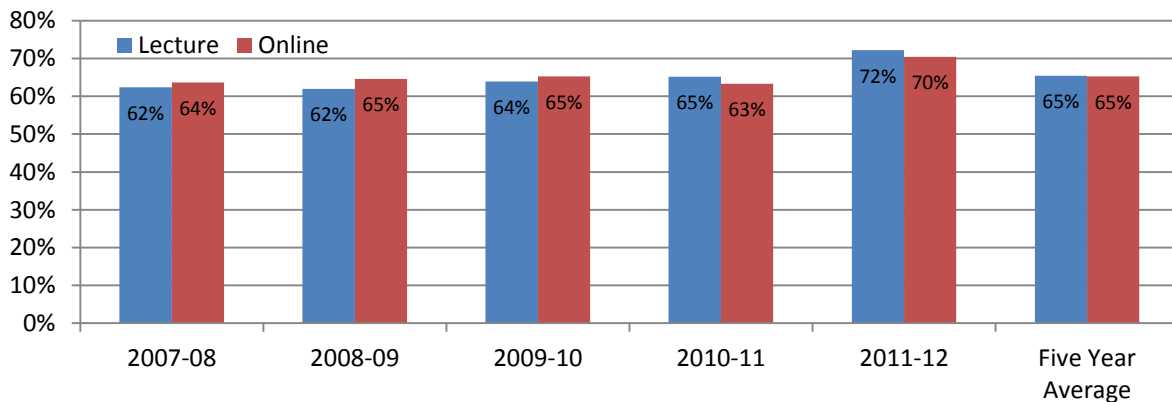


Table 4: SBCCD Success and Completion Rates from 2007 – 2008 to 2011 – 2012, Effect Sizes, and P-Values by Lecture and Online Sections taught by the Same Instructor in the Same Semester.

Academic Year	Lecture or Lecture/Lab Courses			Internet Only or Hybrid Courses			ES*	P-Value**
	Succ.	GOR	S.R.	Succ.	GOR	S.R.		
<b>Success</b>								
2007 – 2008	748	1,198	62.4	838	1,316	63.7	.03	.520
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
Total	5,918	9,046	65.4	5,024	7,691	65.3	.00	.894
<b>Completion</b>								
	Comp.	GOR	C.R.	Comp.	GOR	C.R.	ES*	P-Value**
2007 – 2008	993	1,198	82.9	1,096	1,316	83.3	.01	.792
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***
Total	7,753	9,046	85.7	6,310	7,691	82.0	-.10	< .001***

Note: "Succ." refers to the number of successful grades (i.e. A, B, C, or P), GOR refers to the number of students who earned one of the following grades: A, B, C, D, F, P, NP, I, or W (i.e. enrolled at census), and "S.R." is the success rate or the percent of students who successfully completed the course with an A, B, C, or P grade ("Succ." divided by "GOR"). "Comp." refers to the number of students who completed the class with one of the following grades (i.e. A, B, C, D, F, P, NP, or I), and "C.R." is the Completion rate or the percent of students who completed the course with an A, B, C, D, F, P, NP, or I grade ("Comp." divided by "GOR").

\* 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 2007 – 2008 to 2011 – 2012 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 2007 – 2008 to 2011 – 2012. 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 instruction 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, two-way video, 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 would 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, instructor, and course. 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.

Any questions regarding this report can be directed to the Office of Institutional Effectiveness, Research, and Planning at (909) 389-3206 or you may send an email to [kwurtz@craftonhills.edu](mailto:kwurtz@craftonhills.edu): (District\_DE\_SucRet\_0708to1112.docx, Grades\_District\_GOR\_20120625\_FiveYears\_0708to1112.sav, InstructionMethod\_20130222\_Undup.sav.