



Office of
Research & Planning

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**Research Briefs from the CHC Office of Institutional Research
SBCCD Distance Education Success and Completion Rates
2006 – 2007 to 2010 – 2011**

Overview: The following brief illustrates the number of grades on record earned (GOR), and the success and completion rates for courses in the San Bernardino Community College District (SBCCD) from 2006 – 2007 to 2010 – 2011 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 grades on record (GOR) in internet sessions has increased from 4,250 in 2006 – 2007 to 8,640 in 2010 – 2011, a 103% increase $(8,640 - 4,250 / 4,250)$.
- The success rate in online courses has increased from 56.0% in 2006 – 2007 to 59.2% in 2010 – 2011, a 6% increase $(.592 - .560 / .560)$.
- The completion rate (formally retention) in online courses has increased from 75.2% in 2006 – 2007 to 79.7% in 2010 – 2011, a 6% increase $(.797 - .752 / .752)$.
- When controlling for term, course, and instructor the overall five year success rate is the same for both lecture (61.8%) and online (61.9%) sections.

Methodology: Tables 1 and 2 display the success and completion rates for SBCCD by instruction method from 2006 – 2007 to 2010 – 2011. Instruction method refers to the method of instruction. There are ten methods of instruction identified in Tables 1 and 2: clinical, two-way video and audio, one-way video, internet with delayed interaction, independent study, field experience, laboratory, lecture, and work experience. **The internet – delayed interaction instruction method is the method often referred to as distance education.** At the same time, distance education also includes two-way video and audio, and one-way video.

When examining the success and completion rates (formally retention) illustrated in Tables 1 and 2 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 3 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.

Findings: The distance education sessions with the highest enrollments at SBCCD are the delayed interaction (i.e. internet) internet sessions. Specifically, the number of GOR in internet sessions has increased from 4,250 in 2006 – 2007 to 8,640 in 2010 – 2011, a 103% increase. In contrast, GOR in lecture sessions have only had an 11% increase from 2006 – 2007 to 2010 – 2011. Equally important, the success rate in internet sessions has increased from 56.0% in 2006 – 2007 to 59.2% in 2010 – 2011.

Figure 1. SBCCD Internet Completion (Formally Retention) and Success Rates from 2006 – 2007 to 2010 – 2011.

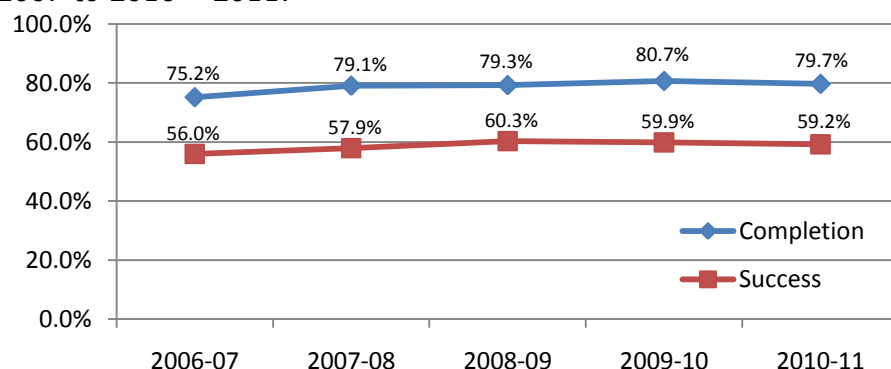


Table 3 and Figure 2 indicate that when controlling for term, course, and instructor the overall five year success rate for lecture (61.8%) and online sections (61.9%) is the same for both types of sections. Equally important, none of the differences in success rate are statistically or substantially different from one another (see Table 3). **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. For instance, of the 74 instructors who taught at least one internet course in 2010 – 2011, only 30 taught the same course in the same term.**

Figure 2. SBCCD Success Rates from 2006 – 2007 to 2010 – 2011 by Lecture and Online Sections taught by the Same Instructor in the Same Semester.

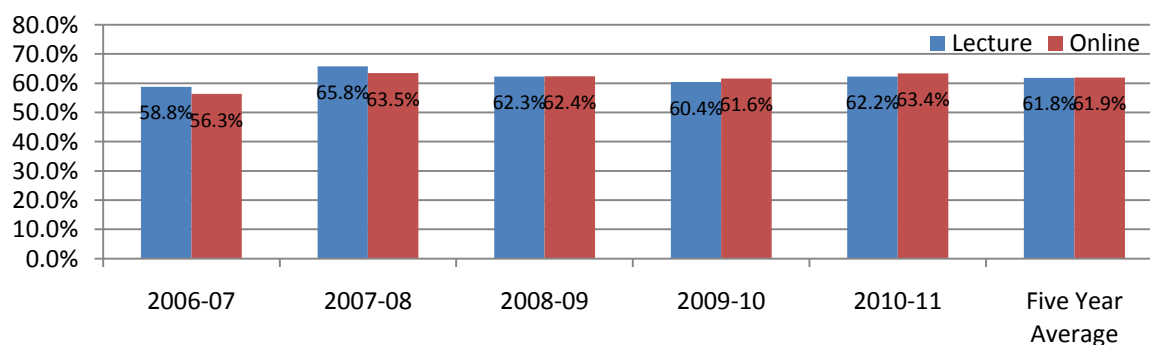


Table 1: SBCCD Success Rate by Instructional Method from 2006 – 2007 to 2010 – 2011.

Instruction Method	2006 – 2007				2007 – 2008				2008 – 2009				2009 – 2010				2010 – 2011			
	Enrolled	GOR	Success	S.R.	Enrolled	GOR	Success	S.R.	Enrolled	GOR	Success	S.R.	Enrolled	GOR	Success	S.R.	Enrolled	GOR	Success	S.R.
Clinical	77	77	76	98.7	70	68	67	98.5	94	94	92	97.9	71	71	70	98.6	83	82	80	97.6
Two-way Video/Audio	95	70	51	72.9	73	61	51	83.6	47	39	36	92.3	70	57	28	49.1	47	32	15	46.9
One-way Video	959	810	505	62.3	304	255	138	54.1												
Internet – Delayed Interaction	6,386	4,250	2,378	56.0	8,483	6,263	3,629	57.9	11,456	8,645	5,215	60.3	12,130	9,371	5,613	59.9	10,452	8,640	5,111	59.2
Independent Study	130	110	85	77.3	98	89	80	89.9	53	53	42	79.2	88	83	66	79.5	89	83	72	86.7
Field Experience	38	38	33	86.8	31	31	29	93.5	50	50	47	94.0	27	27	25	92.6	28	28	22	78.6
Laboratory	9,664	7,504	5,573	74.3	9,187	7,268	5,460	75.1	9,921	8,486	6,597	77.7	10,752	8,987	6,929	77.1	10,440	9,060	7,028	77.6
Lecture	107,328	87,538	57,864	66.1	108,199	91,869	61,349	66.8	115,175	99,925	68,722	68.8	116,838	101,014	67,850	67.2	108,186	97,487	66,282	68.0
Work Experience	1,497	1,166	716	61.4	1,439	1,149	697	60.7	1,208	984	658	66.9	560	418	272	65.1	291	236	167	70.8
Total	126,174	101,563	67,281	66.2	127,884	107,053	71,500	66.8	138,004	118,276	81,409	68.8	140,536	120,028	80,853	67.4	130,796	115,648	78,777	68.1

Note. The blue font refers to distance education sessions, “Enrolled” refers to the number of students who enrolled in the course prior to or after the section start date, 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), “Success” refers to the number of successful grades (i.e. A, B, C, or P), 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 2: SBCCD Completion Rate (Formally Retention) by Instructional Method from 2006 – 2007 to 2010 – 2011.

Instruction Method	2006 – 2007				2007 – 2008				2008 – 2009				2009 – 2010				2010 – 2011			
	Enrolled	GOR	Retained	R.R.	Enrolled	GOR	Retained	R.R.	Enrolled	GOR	Retained	R.R.	Enrolled	GOR	Retained	R.R.	Enrolled	GOR	Retained	R.R.
Clinical	77	77	76	98.7	70	68	67	98.5	94	94	94	100.0	71	71	71	100.0	83	82	82	100.0
Two-way Video/Audio	95	70	56	80.0	73	61	53	86.9	47	39	37	94.9	70	57	45	78.9	47	32	24	75.0
One-way Video	959	810	686	84.7	304	255	197	77.3												
Internet – Delayed Interaction	6,386	4,250	3,195	75.2	8,483	6,263	4,951	79.1	11,456	8,645	6,855	79.3	12,130	9,371	7,565	80.7	10,452	8,640	6,882	79.7
Independent Study	130	110	101	91.8	98	89	82	92.1	53	53	45	84.9	88	83	72	86.7	89	83	80	96.4
Field Experience	38	38	37	97.4	31	31	31	100.0	50	50	50	100.0	27	27	27	100.0	28	28	27	96.4
Laboratory	9,664	7,504	6,406	85.4	9,187	7,268	6,270	86.3	9,921	8,486	7,500	88.4	10,752	8,987	7,906	88.0	10,440	9,060	8,034	88.7
Lecture	107,328	87,538	72,852	83.2	108,199	91,869	77,570	84.4	115,175	99,925	85,610	85.7	116,838	101,014	85,879	85.0	108,186	97,487	83,214	85.4
Work Experience	1,497	1,166	859	73.7	1,439	1,149	842	73.3	1,208	984	775	78.8	560	418	321	76.8	291	236	219	92.8
85.2Total	126,174	101,563	84,268	83.0	127,884	107,053	90,063	84.1	138,004	118,276	100,966	85.4	140,536	120,028	101,886	84.9	130,796	115,648	98,562	85.2

Note. The blue font refers to distance education sessions, “Enrolled” refers to the number of students who enrolled in the course prior to or after the section start date, 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), “Retained” 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 “R.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 (“Retained” divided by “GOR”).

Table 3: SBCCD Success and Completion Rates from 2006 – 2007 to 2010 – 2011, Effect Sizes, and P-Values by Lecture and Distance Education Sections taught by the Same Instructor in the Same Semester.

Academic Year	Lecture Course			Distance Education Course			ES*	P-Value**
	GOR	Succ.	S.R.	GOR	Succ.	S.R.		
Success								
2006 – 2007	822	483	58.8	930	524	56.3	-.05	.308
2007 – 2008	937	617	65.8	1,079	685	63.5	-.05	.269
2008 – 2009	1,915	1,194	62.3	1,617	1,009	62.4	.00	.976
2009 – 2010	2,709	1,637	60.4	2,111	1,301	61.6	.02	.396
2010 – 2011	2,639	1,642	62.2	2,335	1,480	63.4	.02	.397
Total	9,022	5,573	61.8	8,072	4,999	61.9	.00	.831
Completion	GOR	Ret.	R.R.	GOR	Ret.	R.R.		
2006 – 2007	822	636	77.4	930	713	76.7	-.02	.726
2007 – 2008	937	790	84.3	1,079	917	85	.02	.675
2008 – 2009	1,915	1,613	84.2	1,617	1,295	80.1	-.11	.001***
2009 – 2010	2,709	2,293	84.6	2,111	1,720	81.5	-.08	.004***
2010 – 2011	2,639	2,290	86.8	2,335	1,872	80.2	-.19	< .001***
Total	9,022	7,622	84.5	8,072	6,517	80.7	-.10	< .001***

Note: 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), "Succ." refers to the number of successful grades (i.e. A, B, C, or P), 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"). "Ret." 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 "R.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 ("Ret." 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.