



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

Overview: The following illustrates the number of grades on record earned (GOR), and the success and completion rates for Crafton Hills College (CHC) students 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 GOR at CHC in internet sessions has increased from 190 in 2006 – 2007 to 1,120 in 2010 – 2011, a 489% increase.
- The success rate in online courses at CHC has increased from 53.7% in 2006 – 2007 to 70.6% in 2010 – 2011, a statistically significant ($p < .001$) and substantial increase ($ES^* = .36$).
- The completion rate (formally retention) in online courses at CHC has increased from 75.8% in 2006 – 2007 to 85.9% in 2010 – 2011, a 13% increase (.859-.758/.758).
- When controlling for term, course, and instructor the overall five year success rate is higher in online sections (64.4%) than lecture sections (60.0%).
- In 2010 – 2011 the success rate in online courses (69.7%) was substantially ($ES^* = .14$) and statistically significantly ($p = .038$) higher than in lecture courses taught during the same term and by the same instructor (63.2%).

Methodology: Tables 1 and 2 display the success and completion rates for CHC by instruction method from 2006 – 2007 to 2010 – 2011. Instruction method refers to the method of instruction. There are eight methods of instruction identified in Tables 1 and 2: clinical, 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 one-way video at CHC.

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.

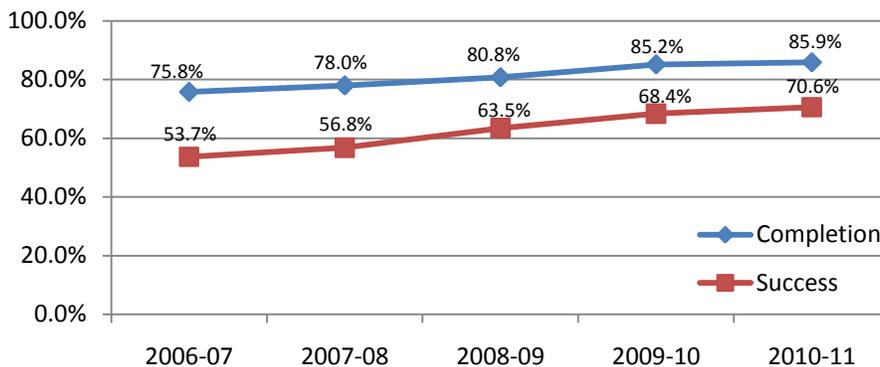
Definitions: The number of grades on record (GOR) refers to one of the following grades and is also the number of students enrolled at census: A, B, C, D, F, P (CR), NP (NC), I, or W. Success rate is the number of A, B, C, or P grades divided by the number of GOR, and completion rate (formally retention) 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. 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 number of GOR in internet sessions has increased from 190 in 2006 – 2007 to 1,120 in 2010 – 2011, a 489% increase. In contrast, GOR in lecture sessions have only had a 17% increase from 2006 – 2007 to 2010 – 2011. Equally important, the success rate in internet sessions has increased from 53.7% in 2006 – 2007 to 70.6% in 2010 – 2011, a statistically significant ($p < .001$) and substantial increase ($ES^* = .36$).

Figure 1. CHC Internet Completion and Success Rates from 2006 – 2007 to 2010 – 2011.



* 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.

Table 3 and Figure 2 indicate that when controlling for term, course, and instructor the overall five year success rate for internet sections (64.4%) is higher than the overall five year success rate for lecture sections (60.0%). In 2010 – 2011 the success rate in online courses (69.7%) was substantially ($ES^* = .14$) and statistically significantly ($p = .038$) higher than in the same lecture courses taught during the same term and by the same instructor (63.2%). **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 14 instructors who taught at least one internet course in 2010 – 2011, only 7 taught the same course in the same term.**

Figure 2. CHC Success Rates from 2006 – 2007 to 2009 – 2010 by Lecture and Online Sections taught by the Same Instructor in the Same Semester.

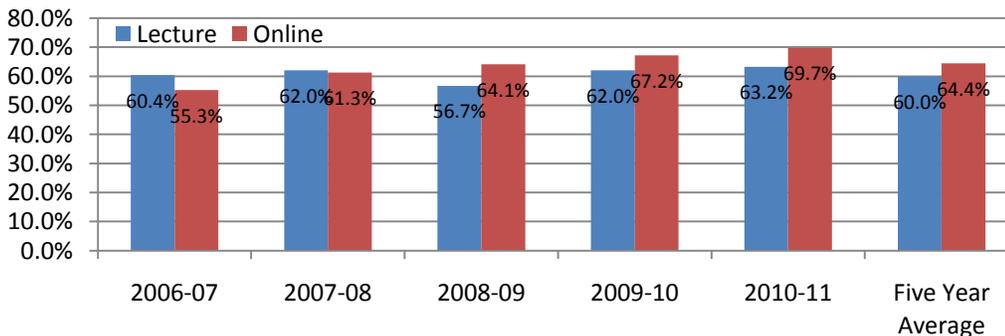


Table 1: CHC Success Rate by Instructional Method from 2006 – 2007 to 2010 – 2011.

Instruction Method	2006 – 2007			2007 – 2008			2008 – 2009			2009 – 2010			2010 – 2011		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Clinical	76	77	98.7	67	68	98.5	92	94	97.9	70	71	98.6	80	82	97.6
One-way Video	488	788	61.9												
Internet	102	190	53.7	295	519	56.8	1,040	1,638	63.5	969	1,417	68.4	791	1,120	70.6
Independent Study	55	59	93.2	37	40	92.5	34	41	82.9	33	43	76.7	69	80	86.3
Field Experience	33	38	86.8	29	31	93.5	47	50	94.0	25	27	92.6	22	28	78.6
Laboratory	2,119	2,881	73.6	1,963	2,702	72.6	2,284	2,986	76.5	2,185	2,875	76.0	2,277	3,010	75.6
Lecture	19,810	28,247	70.1	20,983	29,769	70.5	23,328	32,800	71.1	22,486	32,065	70.1	23,570	33,081	71.2
Work Experience	98	232	42.2	103	226	45.6	47	68	69.1	4	7	57.1			
Total	22,781	32,512	70.1	23,477	33,355	70.4	26,872	37,677	71.3	25,772	36,505	70.6	26,809	37,401	71.7

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

Table 2: CHC Completion Rate by Instructional Method from 2006 – 2007 to 2010 – 2011.

Instruction Method	2006 – 2007			2007 – 2008			2008 – 2009			2009 – 2010			2010 – 2011		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Clinical	76	77	98.7	67	68	98.5	94	94	100.0	71	71	100.0	82	82	100.0
One-way Video	666	788	84.5												
Internet	144	190	75.8	405	519	78.0	1,324	1,638	80.8	1,207	1,417	85.2	962	1,120	85.9
Independent Study	55	59	93.2	38	40	95.0	37	41	90.2	37	43	86.0	77	80	96.3
Field Experience	37	38	97.4	31	31	100.0	50	50	100.0	27	27	100.0	27	28	96.4
Laboratory	2,494	2,881	86.6	2,378	2,702	88.0	2,664	2,986	89.2	2,579	2,875	89.7	2,704	3,010	89.8
Lecture	24,237	28,247	85.8	25,915	29,769	87.1	28,858	32,800	88.0	28,182	32,065	87.9	29,158	33,081	88.1
Work Experience	123	232	53.0	141	226	62.4	63	68	92.6	6	7	85.7			
Total	27,832	32,512	85.6	28,975	33,355	86.9	33,090	37,677	87.8	32,109	36,505	88.0	33,010	37,401	88.3

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

Table 3: CHC Success and Completion Rates from 2006 – 2007 to 2009 – 2010, Effect Sizes, and P-Values by Lecture and Distance Education Courses taught by the Same Instructor in the Same Semester.

Academic Year	Lecture Course			Distance Education Course			ES*	P-Value**
	#	N	%	#	N	%		
Success								
2006 – 2007	74	161	46.0	57	119	47.9	.04	.749
2007 – 2008	106	171	62.0	76	124	61.3	-.01	.904
2008 – 2009	300	529	56.7	202	315	64.1	.15	.034***
2009 – 2010	438	707	62.0	176	262	67.2	.11	.129
2010 – 2011	467	739	63.2	223	320	69.7	.14	.038***
Five Year Average	1,385	2,307	60.0	734	1,140	64.4	.09	.013***
Completion								
2006 – 2007	122	161	75.8	89	119	74.8	-.02	.850
2007 – 2008	133	171	77.8	101	124	81.5	.09	.444
2008 – 2009	471	529	89.0	245	315	77.8	-.31	< .001***
2009 – 2010	620	707	87.7	222	262	84.7	-.09	.245
2010 – 2011	672	739	90.9	264	320	82.5	-.26	< .001***
Five Year Average	2,018	2,307	87.5	921	1,140	80.8	-.19	< .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.