



Research Brief

CHC Distance Education Success and Completion Rates from 2010 – 2011 to 2014 – 2015

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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 CHC courses from 2010 – 2011 to 2014 – 2015 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 proportion of lecture only sections decreased while lab only and internet only sections increased over the last five years.
- The number of internet only sections doubled for the second year in a row with the number of sections increasing from 54 sections in 2013-14 to 106 in 2014-15, an increase of 52 sections (96%).
- The number of GOR in distance education sections increased from 1,329 in 2010-11 to 3,339 in 2014-15, a 151% increase.
- The success rate in distance education sections has remained the same at 69% over the last five years.
- In 2014-15, students in online sections were as likely to successfully complete the course (75%) as students in lecture only sections (76%) taught by the same instructor in the same semester.

**Findings**

Table 1 illustrates the number and percent of sections by instructional method from 2010 – 2011 to 2014 – 2015 in sections where a grade on record (GOR) was earned. The proportion of lecture only sections slightly decreased while lab only and internet only sections both increased over the last five years. Specifically, the number of internet only sections doubled for the second year in a row with the number of sections increasing from 54 sections in 2013 – 2014 to 106 in 2014 – 2015, an increase of 52 sections (96%).

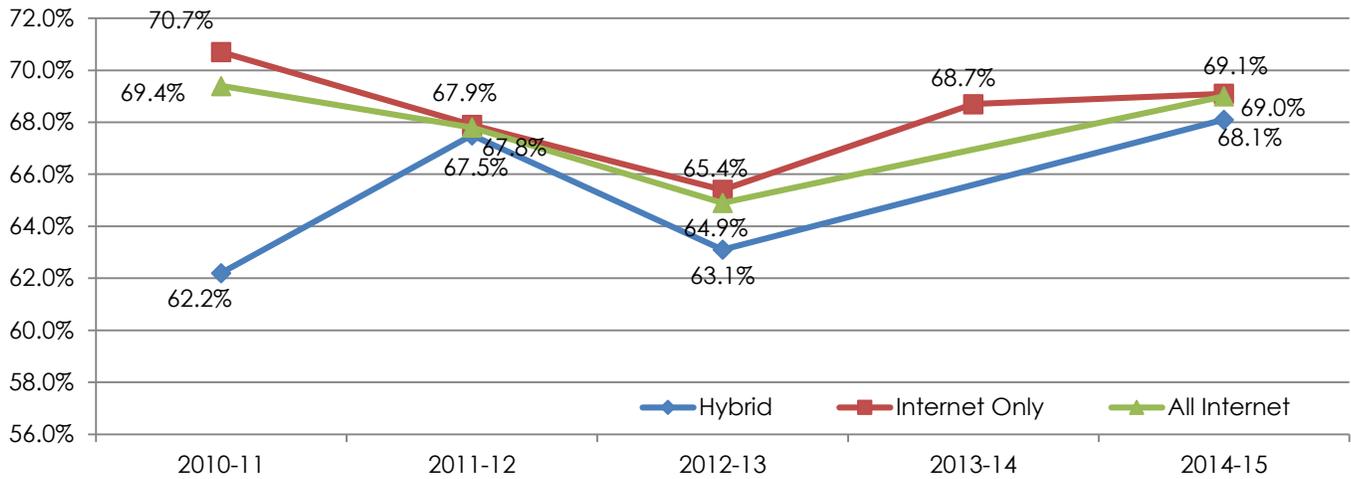
**Table 1: Number and Percent of Sections by Instructional Method from 2010 – 2011 to 2014 – 2015 for Sections where a Grade on Record was Earned.**

Instructional Method	2010-2011		2011-2012		2012-2013		2013-2014		2014-2015	
	#	%	#	%	#	%	#	%	#	%
Lecture Only	767	62.8	692	63.8	734	65.6	796	66.1	916	59.9
Lab Only	106	8.7	92	8.5	88	7.9	96	8.0	195	12.7
Internet Only	41	3.4	25	2.3	26	2.3	54	4.5	106	6.9
Hybrid	9	0.7	12	1.1	8	0.7	0	0.0	14	0.9
Lecture/Lab	255	20.9	209	19.3	213	19.0	205	17.0	250	16.3
Independent Study	15	1.2	15	1.4	20	2.0	21	1.7	27	1.8
Field Experience	6	0.5	4	0.4	8	0.7	2	0.2	3	0.2
Clinical	20	1.6	22	2.0	22	2.0	10	0.8	19	1.2
Tutoring	2	0.2	13	1.2	0	0.0	21	1.7	0	0.0
<b>Total</b>	<b>1,221</b>	<b>100.0</b>	<b>1,084</b>	<b>100.0</b>	<b>1,119</b>	<b>100.0</b>	<b>1,205</b>	<b>100.0</b>	<b>1,530</b>	<b>100.0</b>

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 distance education (i.e. internet only and hybrid sections) increased from 1,329 in 2010 – 2011 to 3,339 in 2014 – 2015, a 151% increase (see Tables 2 and 3). In contrast, GOR in lecture only sections decreased by 8% from 2010 – 2011 to 2014 – 2015. Equally important, the success rate in distance education sections has remained the same at 69% from 2010 – 2011 to 2014 – 2015 (See Figure 1). The success rate in lecture sections has increased from 71% in 2010 – 2011 to 73% in 2014 – 2015. **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: CHC Internet Only and Hybrid Success Rates from 2010 – 2011 to 2014 – 2015.



Note. Hybrid courses were not offered in 2013-14. Subsequently, Hybrid and All Internet points are excluded during 2013-14.

Table 2: CHC Success Rate by Instructional Method from 2010 – 2011 to 2014 – 2015.

Instructional Method	2010 – 2011			2011 – 2012			2012 – 2013			2013 – 2014			2014 – 2015		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Lecture Only	18,948	26,695	71.0	17,362	23,703	73.2	16,344	22,455	72.8	17,442	23,979	72.7	17,940	24,441	73.4
Lab Only	2,307	3,031	76.1	2,109	2,641	79.9	1,967	2,524	77.9	1,769	2,266	78.1	2,238	2,848	78.6
<b>Internet Only</b>	<b>792</b>	<b>1,120</b>	<b>70.7</b>	<b>539</b>	<b>794</b>	<b>67.9</b>	<b>471</b>	<b>720</b>	<b>65.4</b>	<b>1,084</b>	<b>1,579</b>	<b>68.7</b>	<b>2,070</b>	<b>2,997</b>	<b>69.1</b>
<b>Hybrid</b>	<b>130</b>	<b>209</b>	<b>62.2</b>	<b>191</b>	<b>283</b>	<b>67.5</b>	<b>137</b>	<b>217</b>	<b>63.1</b>				<b>233</b>	<b>342</b>	<b>68.1</b>
Lecture/Lab	4,390	5,938	73.9	3,579	4,689	76.3	3,260	4,356	74.8	3,203	4,412	72.6	3,594	4,883	73.6
Independent Study	70	80	87.5	51	56	91.1	47	54	87.0	51	54	94.4	69	76	90.8
Field Experience	47	55	85.5	19	27	70.4	16	20	80.0	2	2	100	27	33	81.8
Clinical	427	555	76.9	428	514	83.3	382	481	79.4	219	324	67.6	385	483	79.7
Tutoring	117	193	60.6	31	67	46.3				189	249	75.9			
<b>Total</b>	<b>27,228</b>	<b>37,876</b>	<b>71.9</b>	<b>24,309</b>	<b>32,774</b>	<b>74.2</b>	<b>22,624</b>	<b>30,827</b>	<b>73.4</b>	<b>23,959</b>	<b>32,865</b>	<b>72.9</b>	<b>26,556</b>	<b>36,103</b>	<b>73.6</b>

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.

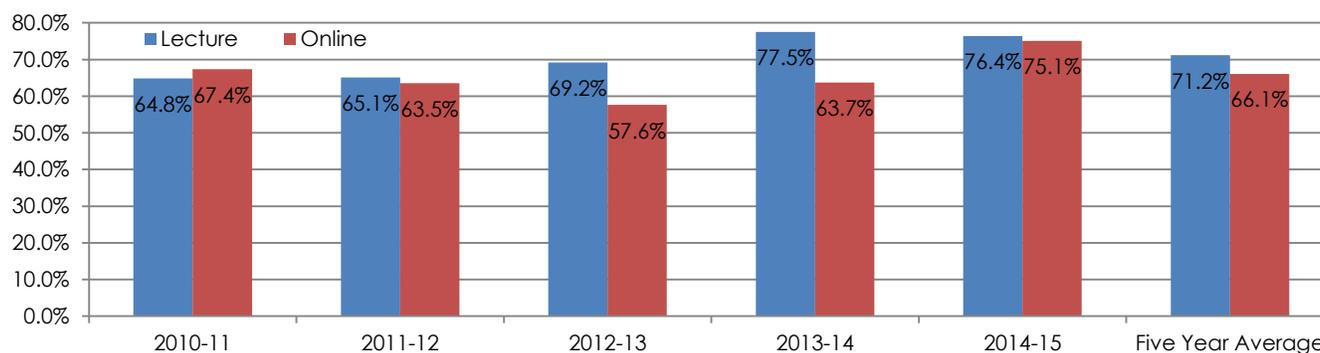
Table 3: CHC Completion Rate by Instructional Method from 2010 – 2011 to 2014 – 2015.

Instructional Method	2010 – 2011			2011 – 2012			2012 – 2013			2013 – 2014			2014 – 2015		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Lecture Only	23,585	26,695	88.3	21,262	23,703	89.7	20,540	22,455	91.5	21,975	23,979	91.6	22,428	24,441	91.8
Lab Only	2,724	3,031	89.9	2,410	2,641	91.3	2,343	2,524	92.8	2,085	2,266	92.0	2,667	2,848	93.6
<b>Internet Only</b>	<b>962</b>	<b>1,120</b>	<b>85.9</b>	<b>657</b>	<b>794</b>	<b>82.7</b>	<b>622</b>	<b>720</b>	<b>86.4</b>	<b>1,387</b>	<b>1,579</b>	<b>87.8</b>	<b>2,623</b>	<b>2,997</b>	<b>87.5</b>
<b>Hybrid</b>	<b>164</b>	<b>209</b>	<b>78.5</b>	<b>242</b>	<b>283</b>	<b>85.5</b>	<b>179</b>	<b>217</b>	<b>82.5</b>				<b>288</b>	<b>342</b>	<b>84.2</b>
Lecture/Lab	5,267	5,938	88.7	4,175	4,689	89.0	3,966	4,356	91.0	3,924	4,412	88.9	4,352	4,883	89.1
Independent Study	77	80	96.3	54	56	96.4	50	54	92.6	51	54	94.4	73	76	96.1
Field Experience	53	55	96.4	26	27	96.3	20	20	100.0	2	2	100	33	33	100.0
Clinical	450	555	81.1	454	514	88.3	406	481	84.4	239	324	73.7	409	483	84.7
Tutoring	186	193	96.4	36	67	53.7				218	249	87.5			
<b>Total</b>	<b>33,468</b>	<b>37,876</b>	<b>88.4</b>	<b>29,316</b>	<b>32,774</b>	<b>89.4</b>	<b>28,128</b>	<b>30,827</b>	<b>91.2</b>	<b>29,881</b>	<b>32,865</b>	<b>90.9</b>	<b>32,873</b>	<b>36,103</b>	<b>91.1</b>

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 (71%) and online sections (66%) is statistically similar for both types of instructional methods. Additionally, in 2014 – 2015, students in online sections were as likely to successfully complete the course (75%) as students in lecture only sections (76%) taught by the same instructor in the same semester; however, the difference was not statistically different. Overall, students in lecture courses were substantially (ES = .32) and statistically significantly ( $p < .001$ ) more likely to complete (94%) the course than students in an online course (84%) 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: CHC Success Rates from 2010 – 2011 to 2014 – 2015 by Lecture and Online Sections taught by the Same Instructor in the Same Semester.**



**Table 4: CHC Success and Completion Rates from 2010 – 2011 to 2014 – 2015, 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	%		
<b>Success</b>								
2010 – 2011	518	800	64.8	289	429	67.4	.06	.355
2011 – 2012	254	390	65.1	132	208	63.5	-.03	.687
2012 – 2013	519	750	69.2	215	373	57.6	-.24	< .001***
2013 – 2014	557	719	77.5	275	432	63.7	-.31	< .001***
2014 – 2015	650	851	76.4	361	481	75.1	-.03	.588
Five Year Average	500	702	71.2	254	385	66.1	-.11	.076
<b>Completion</b>								
2010 – 2011	740	800	92.5	338	429	78.8	-.42	< .001***
2011 – 2012	364	390	93.3	168	208	80.8	-.40	< .001***
2012 – 2013	699	750	93.2	302	373	81.0	-.39	< .001***
2013 – 2014	680	719	94.6	382	432	88.4	-.23	< .001***
2014 – 2015	810	851	95.2	433	481	90.0	-.21	.001***
Five Year Average	659	702	93.8	325	385	84.4	-.32	< .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 2010 – 2011 to 2014 – 2015 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 Crafton Hills College.

Tables 2 and 3 display the success and completion rates for CHC by instruction method from 2010 – 2011 to 2014 – 2015. There are eleven 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, 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.