

Fall 2016 and spring 2017 Dual Enrolled Crafton Hills College Students

Prepared by Keith Wurtz

Purpose of Brief

To examine the characteristics of Crafton Hills College 2016-2017 dual enrolled students and the relationship between dual enrolled students and course success.

Summary of Findings**Dual Enrolled Student Characteristics**

- There were 20 dual enrolled sections at four high schools
- A higher proportion of female students (58%) are dual enrolled when compared to all other CHC female students (53%)
- Dual enrolled students were more likely to be Asian, African American, and from two or more races when compared to the CHC population

Relationship between Dual Enrolled Students and Course Success

- Dual enrolled students had a substantially higher course success rate (81%) than non-dual enrolled 18 year old or younger students enrolled in the same courses (75%)
- Dual enrolled students had a statistically significant and substantially higher course success rate (83%) than non-dual enrolled 18 year old or younger students (73%) enrolled in the same course during the same term and taught by the same instructor

Overview

The Crafton Hills College (CHC) Instructional Office and Academic Senate requested that the CHC Office of Institutional Effectiveness, Research, and Planning examine the relationship between students who are dual enrolled and course success. Dual enrolled students enrolled at one of the following high schools and CHC at the same time: Citrus Valley, Redlands, Redlands East Valley, and Yucaipa. This brief illustrates the number of fall 2016 and spring 2017 dual enrolled students, demographics of dual enrolled students, and course success rate of dual enrolled students by comparison group and course.

Possible Implications

When analyzing the data provided in this brief there are two implications that may help to inform how CHC works with dual enrolled students. First, overall, dual enrolled students were statistically significantly and substantially more likely to complete their courses successfully when compared to the comparison groups. In addition, dual enrolled students were more likely to be Asian, African American, and from two or more races and less likely to be Caucasian. Accordingly, Crafton may want to consider expanding dual enrollment as a strategy to increase course success and access to these groups. Second, dual enrolled students were most likely to be seventeen or sixteen years old and CHC may want to focus on reaching out to these age groups at local area high schools.

Methodology

According to the [CCCCO and the RP Group](#) dual enrollment refers to high school students enrolled in community college credit courses and is the preferred term, rather than the use of concurrent enrollment. Dual enrollment is the term used in this report.

Sample

In fall 2016, there were four high schools and eight Crafton sections that enrolled dual enrolled students (see Tables 1 and 2). The disciplines included American Sign Language, Arabic, Art, Communication Studies, Business Administration, Fire, and Sociology. In spring 2017, the same four high schools offered twelve Crafton dual enrolled sections. The disciplines in spring 2017 included Allied Health, Arabic, Art, American Sign Language, Business, CHC, Engineering, Fire, Music, and Sociology.

Table 1: Fall 2016 and spring 2017 Dual Enrolled Sections by High School.

High School	Fall 2016 Section	Spring 2017 Section
Citrus Valley	ASL-101-46*	ASL-102-45*
	SOC-100-46*	SOC-105-40*
		ARABIC-102-45
		ENGR-101-45*
Redlands	ARABIC-101-35	MUSIC-103-40*
	ART-103-41*	ART-124-40*
		ART-175-11
Redlands East Valley	BUSAD-100-46*	BUSAD-230-45
	FIRET-100-41*	FIRET-101-40*
		CHC-100-36*
Yucaipa	COMMST-100-35*	AH-101-45*
	SOC-100-35*	SOC-100-45*

*These sections were included in the second comparison group. The second comparison groups consisted of students in the same course, taught by the same instructor in the same semester.

Table 2: Number of Dual Enrolled Sections Offered at High Schools by Course, Title, and Term from fall 2016 to spring 2017.

Course	Course Title	Term	
		Fall 2016	Spring 2017
AH-101	Medical Terminology		1
ARABIC-101	College Arabic I	1	
ARABIC-102	College Arabic II		1
ART-103	Art Appreciation	1	
ART-124	Drawing I		1
ART-175	Sculpture		1
ASL-101	American Sign Language I	1	
ASL-102	American Sign Language II		1
BUSAD-100	Introduction to Business	1	
BUSAD-230	Using Computers for Business		1
CHC-100	Student Success and College Experience		1
COMMST-100	Elements of Public Speaking	1	
ENGR-101	Introduction to Engineering		1
FIRET-100	Fire Protection Organization	1	
FIRET-101	Fire Prevention Technology		1
MUSIC-103	Appreciation of American Popular Music		1
SOC-100	Introduction to Sociology	2	1
SOC-105	Social Problems		1
Total Number of Sections		8	12

Table 3 illustrates the number of unduplicated dual enrolled students by high school and term. Dual enrolled students were most likely to attend Citrus Valley High School in both fall (40%) and spring (30%) followed by Yucaipa High School 36% and 24% respectively.

Table 3: Number and Percent of Dual Enrolled Students by High School for fall 2016 and spring 2017.

High School	Term			
	Fall 2016		Spring 2017	
	#	%	#	%
Citrus Valley	44	40.0	30	30.3
Redlands	16	14.5	23	23.2
Redlands East Valley	11	10.0	22	22.2
Yucaipa	39	35.5	24	24.2
Total	110	100.0	99	100.0

Table 4 illustrates the unduplicated 2016-2017 number and percent of dual enrolled and all other CHC students by gender, age, and ethnicity. A higher proportion of female students (58%) are dual enrolled when compared to all other CHC female students (53%). Conversely, a lower proportion of male students (41%) are dual enrolled when compared to all other CHC male students (47%). Dual enrolled students were more likely to be Asian, African American, and from two or more races and less likely to be Caucasian. Dual enrolled students were more likely to be 17 years old (46%) followed by students who were 16 years old (39%).

Table 4: 2016-2017 Unduplicated Dual Enrolled Students and All Other CHC Students by Gender, Age, and Ethnicity.

Demographics	Dual Enrolled		All Other CHC Students	
	#	Column %	#	Column %
Gender				
Female	103	57.9	3,608	53.1
Male	73	41.0	3,166	46.6
Unknown	2	1.1	20	0.3
Total	178	100.0	6,794	100.0
Ethnicity				
Asian	15	8.4	378	5.6
African American	11	6.2	262	3.9
Hispanic	81	45.5	3,127	46.0
Native American	0	0.0	27	0.4
Two or More Races	16	9.0	411	6.0
Caucasian	55	30.9	2,562	37.7
Unknown	0	0.0	27	0.4
Total	178	100.0	6,794	100.0
Age				
13			2	0.0
14			1	0.0
15	10	5.6	4	0.1
16	70	39.3	38	0.6
17	81	45.5	101	1.5
18*	17	9.6	676	9.9
19 years old or older**			5,971	87.9
Unknown			1	0.0
Total	178	100.0	6,794	100.0

*A limitation is that the seventeen 18 year old students may not be dual enrolled.

**Twenty-six students enrolled in a dual enrolled section were between the ages of 19 to 55 and excluded from the study.

Table 5 compares the course success rate of dual enrolled CHC students to two comparison groups: All Courses (18 years old or younger) and the Second Comparison Group. Students in the All Courses (18 year old or younger) comparison group were all of the other Crafton students 18 years old or younger enrolled in the same courses that the dual enrolled students were enrolled in, in 2016-2017. A limitation to comparing dual enrolled students to all other 18 years old or younger students enrolled in the same courses is that the comparison does not control for instructor, section, or dual enrolled student characteristics. The Second Comparison Group compares dual enrolled students to 18 year old or younger students enrolled in the same course, term, and instructor. A limitation to this comparison is that 16 out of 20 dual enrolled sections were included in the comparison and the comparison does not control for section or dual enrolled student characteristics.

Course success is defined as earning a grade of A, B, C, or P divided by the total number of grades on record (GOR): A, B, C, D, F, I, P, NP, or W. The effect size statistic was used to indicate the size of the difference on student course success. Jacob Cohen developed one method of interpreting effect size. 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. Research in the social sciences has indicated that a substantial effect is considered meaningful if the effect size is .10 or higher. 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).

Findings

Referring to Table 5, when compared to all other CHC 18 years’ old or younger students enrolled in the same course during the same term, dual enrolled students had a substantially higher course success rate (81%) than students enrolled in the same courses (75%). Moreover, when compared to students enrolled in the same section during the same term and taught by the same instructor, dual enrolled students had a statistically significantly and substantially higher course success rate (83%) than non-dual enrolled students (73%).

Table 5: Fall 2016 Course Success of Dual Enrolled and Non-Dual Enrolled Students by Comparison Group.

Term	Non-Dual Enrolled Students			Dual Enrolled Students			Statistically Significant*	Substantially Different*
	#	N	%	#	N	%		
All Courses (18 or Younger)**	305	405	75.3	173	213	81.2	No	Yes
Second Comparison Group***	333	459	72.5	160	194	82.5	Yes	Yes

*P < .05; ES >= .14.

**Compares dual enrolled students to all students 18 years old or younger enrolled in another section of the same course.

***Compares dual enrolled students to students enrolled in another section of the same course taught by the same instructor. If a comparison section was not found the section was excluded from the study. ARABIC-101-35 was excluded in fall 2016 and ART-175-11 and BUSAD-230-45 were excluded in spring 2017.

Table 6 illustrates the course success rate of dual enrolled and non-dual enrolled 18 year old or younger students by course. Of the fourteen dual enrolled courses compared to the non-dual enrolled courses, 10 of the 14 (71%) dual enrolled courses had higher course success rates than the non-dual enrolled courses. Equally important, two courses in fall 2016 (ART-124 and CHC-100) and six courses in spring 2017 (ARABIC-102, CHC-100, COMMST-100, FIRET-100, FIRET-101, and SOC-105) all had 100% course success rates. On the other hand, three of the four dual enrolled courses with lower course success rates had similar or high course success rates. Specifically, ART-103 dual enrolled students had a 71% course success rate compared to a 73% non-dual enrolled course success rate. ART-124 dual enrolled students had an 88% course success rate. MUSIC-103 dual enrolled students had a 64% course success rate compared to non-dual enrolled students who had a 93% course success rate; however, there were only 11 dual enrolled students. Conversely, ASL-101 dual enrolled students had a substantially lower course success rate (63%) than non-dual enrolled students (74%). The number of ASL-101 dual enrolled students who earned a GOR was 27 suggesting that the dual enrolled students may have struggled with ASL-101.

Table 6: Course Success Rates by Course, Dual Enrollment, and Term for fall 2016 and spring 2017.

Course	Non-Dual Enrolled (18 or Younger)			Dual Enrolled Students			Dual Enrolled Success Rate is Same or Higher than Non-Dual Enrolled
	#	N	%	#	N	%	
AH-101	5	7	71.4	11	15	73.3	Yes
ARABIC-101				6	9	66.7	
ARABIC-102				3	3	100.0	
ART-103	8	11	72.7	5	7	71.4	No
ART-124	3	3	100.0	7	8	87.5	No
ART-175				2	4	50.0	
ASL-101	31	42	73.8	17	27	63.0	No
ASL-102	9	12	75.0	11	12	91.7	Yes
BUSAD-100	15	23	65.2	6	7	85.7	Yes
BUSAD-230				5	6	83.3	
CHC-100	1	1	100.0	8	8	100.0	Yes
COMMST-100	67	88	76.1	11	11	100.0	Yes
ENGR-101				8	9	88.9	
FIRET-100	15	21	71.4	4	4	100.0	Yes
FIRET-101	7	13	53.8	8	8	100.0	Yes
MUSIC-103	13	14	92.9	7	11	63.6	No
SOC-100	127	163	77.9	46	56	82.1	Yes
SOC-105	4	7	57.1	8	8	100.0	Yes
Total	305	405	75.3	173	213	81.2	Yes