



**Research Brief**

**Relationship between Tutoring Center Utilization and Course Success and Completion**

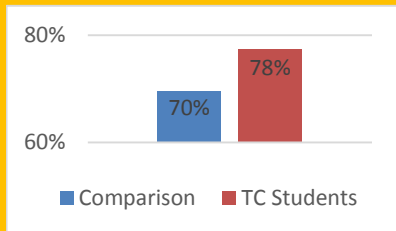
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**Purpose of Brief**

The purpose of this brief is to examine the relationship between Crafton Hills College students who utilized the Tutoring Center from Fall 2013 to Spring 2015 and course success.

**Summary of Findings**

- Students who accessed the Tutoring Center (TC) are statistically significantly and substantially more likely to successfully complete their courses (78%) than students in the same section who did not access the TC (70%)



- The Tutoring Center is most effective with the following groups of students:
  - **Males** (77% course success vs 68% of male students who didn't access TC)
  - **Hispanics** (75% course success vs 66% of Hispanic students who didn't access TC)
  - **African American** (74% course success vs 65% of African American students who didn't access TC)

**Overview**

At the request of the Crafton Hills College (Crafton) Tutoring Center (TC) Coordinator, the Office of Institutional Effectiveness, Research, and Planning (OIERP) examined course performance (i.e. course success and completion rates) from Fall 2013 to Spring 2015. Performance outcome data was further disaggregated by student demographic characteristics (race/ethnicity, gender, age group, and income).

**Methodology**

Dating back to the Fall 2013 semester, Crafton has managed an electronic sign-in system at the TC location that collects the student ID (SID) and the section number of the course that the student is seeking support. Collecting the course section number with the SID allowed the more methodologically sound comparison between students who utilized the TC with students enrolled in the same section who did not utilize the TC. As a result, the OIERP was able to control for term and faculty, and in some cases student skill level (i.e. in English, math, and reading). A limitation to the comparison between students who access the TC and students in the same section who did not access the TC was that student motivation and prior performance (i.e. GPA) were not controlled for.

In 2013-2014 (Fall 2013 and Spring 2014) 2,592 (35%) Crafton students accessed the TC and earned a GOR, and in 2014-2015 (Summer 2014, Fall 2014, and Spring 2015) 2,432 (30%) students accessed the TC and earned a GOR. Students accessing the TC were compared on course success and course completion to students who earned a grade on record (GOR) in the same section. Course success refers to earning a grade of A, B, C, or P, course completion refers to earning a grade of A, B, C, D, F, I, P, or NP (all but a "W" grade), and a GOR is a grade of 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 and completion between TC students and students who earned a grade on record in the same section. 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. 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

Table 1 illustrates the *course success rate* for students who accessed the TC and students who earned a GOR in the same section and did not access the TC, referred to as the comparison group. TC students were statistically significantly and substantially more likely to complete their courses with a “C” grade or better (78%) than students enrolled in the same section who did not access the TC (70%). Male students who accessed the TC were also statistically significantly and substantially more likely to successfully complete their course (77%) than male students in the same section who did not access the TC (68%). In addition, the relationship between TC utilization and course success, while effective with most every demographic group, appears to be most effective with male students (ES = .21,  $p < .0001$ ), followed by students 19 years old or younger (ES = .20,  $p < .0001$ ), Hispanic students (ES = .20,  $p < .0001$ ), African American students (ES = .19,  $p < .0001$ ), and Native American students (ES = .19,  $p < .0001$ ). Conversely, the only groups where the TC did not have a positive relationship with course success was for students who are 35 years or older. Students in this age group already have course success rates above the 73% Crafton campus average.

**Table 1: Fall 2013 to Spring 2015 Course Success Rate Comparison between TC Students and Students Enrolled in the Same Section by Gender, Age, Ethnicity, and Income.**

Demographics	Comparison Group			Tutoring Center Students			Effect Size*	p - Value**
	#	N	%	#	N	%		
<b>Gender</b>								
Female	16,130	22,648	71.2	4,797	6,171	77.7	.15	$p < .001$
Male	13,504	19,986	67.6	3,606	4,676	77.1	.21	$p < .001$
Unknown	35	52	67.3	10	13	76.9	.21	0.489
<b>Total</b>	<b>29,669</b>	<b>42,686</b>	<b>69.5</b>	<b>8,413</b>	<b>10,860</b>	<b>77.5</b>	<b>.18</b>	<b><math>p &lt; .001</math></b>
<b>Age</b>								
19 or Younger	10,311	15,213	67.8	4,074	5,282	77.1	.20	$p < .001$
20-24 Years Old	12,948	18,760	69.0	2,684	3,461	77.5	.19	$p < .001$
25-29 Years Old	3,213	4,481	71.7	752	940	80.0	.19	$p < .001$
30-34 Years Old	1,319	1,809	72.9	346	443	78.1	.12	0.020
35-39 Years Old	746	987	75.6	160	223	71.7	-.09	0.248
40-49 Years Old	751	956	78.6	257	328	78.4	.00	0.939
50 or Older	380	479	79.3	140	183	76.5	-.07	0.438
<b>Total</b>	<b>29,669</b>	<b>42,686</b>	<b>69.5</b>	<b>8,413</b>	<b>10,860</b>	<b>77.5</b>	<b>.18</b>	<b><math>p &lt; .001</math></b>
<b>Ethnicity</b>								
Asian	1,779	2,385	74.6	533	665	80.2	.13	0.002
African American	2,026	3,123	64.9	739	999	74.0	.19	$p < .001$
Hispanic	12,510	19,026	65.8	3,991	5,305	75.2	.20	$p < .001$
Native American	609	849	71.7	196	245	80.0	.19	0.006
Caucasian	12,659	17,179	73.7	2,940	3,627	81.1	.17	$p < .001$
Unknown	86	124	69.4	14	19	73.7	.09	0.699
<b>Total</b>	<b>29,669</b>	<b>42,686</b>	<b>69.5</b>	<b>8,413</b>	<b>10,860</b>	<b>77.5</b>	<b>.18</b>	<b><math>p &lt; .001</math></b>
<b>Economically Disadvantaged</b>								
No	12,239	17,025	71.9	2,598	3,254	79.8	.18	$p < .001$
Yes	17,430	25,661	67.9	5,815	7,606	76.5	.19	$p < .001$
<b>Total</b>	<b>29,669</b>	<b>42,686</b>	<b>69.5</b>	<b>8,413</b>	<b>10,860</b>	<b>77.5</b>	<b>.18</b>	<b><math>p &lt; .001</math></b>

\*Effect Size – a meaningful or substantial effect size difference is .10 or higher.

\*\*“p - Value” – a p-value that is less than .05 indicates that the difference in course success is a result of chance only 5 out of 100 times.

Table 2 illustrates the *course completion rate* for students who accessed the TC and students who earned a GOR in the same section and did not access the TC, referred to as the comparison group. TC students were statistically significantly and substantially more likely to complete their courses (94%) than students enrolled in the same section who did not access the TC (90%). African American students who accessed the TC were also statistically significantly and substantially more likely to complete their course (95%) than male students in the same section who did not access the TC (88%). In addition, the relationship between TC utilization and course completion, while effective with every demographic group, appears to be most effective with African American students (ES = .22,  $p < .0001$ ), followed by students 25-34 years old (ES = .18,  $p < .0001$ ), and male students (ES = .18,  $p < .0001$ ).

**Table 2: Fall 2013 to Spring 2015 Course Completion Rate Comparison between TC Students and Students Enrolled in the Same Section by Gender, Age, Ethnicity, and Income.**

Demographics	Comparison Group			Tutoring Center Students			Effect Size*	p - Value**
	#	N	%	#	N	%		
<b>Gender</b>								
Female	20,375	22,648	90.0	5,805	6,171	94.1	.14	$p < .001$
Male	17,823	19,986	89.2	4,425	4,676	94.6	.18	$p < .001$
Unknown	45	52	86.5	12	13	92.3	.17	0.526
<b>Total</b>	<b>38,243</b>	<b>42,686</b>	<b>89.6</b>	<b>10,242</b>	<b>10,860</b>	<b>94.3</b>	<b>.16</b>	<b><math>p &lt; .001</math></b>
<b>Age</b>								
19 or Younger	13,922	15,213	91.5	5,069	5,282	96.0	.17	$p < .001$
20-24 Years Old	16,678	18,760	88.9	3,231	3,461	93.4	.15	$p < .001$
25-29 Years Old	3,935	4,481	87.8	878	940	93.4	.18	$p < .001$
30-34 Years Old	1,579	1,809	87.3	412	443	93.0	.18	$p < .001$
35-39 Years Old	864	987	87.5	197	223	88.3	.02	0.738
40-49 Years Old	838	956	87.7	288	328	87.8	.00	0.944
50 or Older	426	479	88.9	167	183	91.3	.08	0.361
<b>Total</b>	<b>38,243</b>	<b>42,686</b>	<b>89.6</b>	<b>10,242</b>	<b>10,860</b>	<b>94.3</b>	<b>.16</b>	<b><math>p &lt; .001</math></b>
<b>Ethnicity</b>								
Asian	2,177	2,385	91.3	634	665	95.3	.15	$p < .001$
African American	2,748	3,123	88.0	946	999	94.7	.22	$p < .001$
Hispanic	16,973	19,026	89.2	5,006	5,305	94.4	.17	$p < .001$
Native American	771	849	90.8	231	245	94.3	.13	0.052
Caucasian	15,460	17,179	90.0	3,406	3,627	93.9	.13	$p < .001$
Unknown	114	124	91.9	19	19	100.0	.32	0.001
<b>Total</b>	<b>38,243</b>	<b>42,686</b>	<b>89.6</b>	<b>10,242</b>	<b>10,860</b>	<b>94.3</b>	<b>.16</b>	<b><math>p &lt; .001</math></b>
<b>Economically Disadvantaged</b>								
No	15,419	17,025	90.6	3,107	3,254	95.5	.17	$p < .001$
Yes	22,824	25,661	88.9	7,135	7,606	93.8	.16	$p < .001$
<b>Total</b>	<b>38,243</b>	<b>42,686</b>	<b>89.6</b>	<b>10,242</b>	<b>10,860</b>	<b>94.3</b>	<b>.16</b>	<b><math>p &lt; .001</math></b>

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