

California Critical Thinking Skills Test (CCTST)

CCTST Overall Comparison of HLGU Freshmen to Seniors

Year	# of Freshmen	# of Seniors	<i>p</i>	< .05
2011-12	136	75	.00797	Yes
2012-13	128	54	.0156	Yes
2013-14	98	80	.008	Yes
2014-15	112	85	<.0001	Yes
2015-16	119	99	.00753	Yes
2016-17	92	86	.00128	Yes
2017-18	111	77	<.0001	Yes
2018-19	112	66	<.0001	Yes
2019-20	No testing due to COVID			
2020-21	89	60	<.146	No
2021-22	100	51	<.0001	Yes

HLGU Analysis by Subtest Comparison Freshmen to Seniors (p values)

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2020-21	2021-22
Analysis	0.0011 *	0.6547	0.6257	0.0056 *	0.0075 *	0.1725	<0.001 *	<0.001 *	0.2402	<0.0007 *
Inference	0.0350 *	0.0006 *	0.0114 *	<0.001 *	0.0041 *	0.0009 *	<0.001 *	<0.001 *	1.0	<0.0001 *
Evaluation	0.1225	0.1261	0.0214 *	0.01 *	0.0714	0.0085 *	<0.001 *	<0.001 *	<0.004 *	<0.0082 *
Induction	0.0944	0.0402 *	0.0063 *	<0.001 *	0.0364 *	0.0005 *	<0.001 *	<0.001 *	0.1952	<0.0017 *
Deduction	0.0018 *	0.0247 *	0.0308 *	0.0016 *	0.0015 *	0.0286 *	<0.001 *	<0.001 *	0.2055	<0.0001 *

Comparison of Statistical Significance between Freshmen & Seniors

[illegible]

Matched Pairs

- By matching student numbers—freshman and senior of the same student
- in 2015-16, we had 39 matched pairs
- in 2016-17, we had 25 matched pairs
- The number of matched pairs may be small, but a causal effect can then be implied.

Matched Pairs—2016 Seniors

- Mean of the Difference between Spring Seniors and Fall Freshmen (39 students)

	P-value	< .05
Composite	0.0134	+
Analysis	0.3615	
Inference	0.1559	
Evaluation	0.0014	+
Induction	0.0573	borderline
Deduction	0.0344	+

Matched Pairs—2017 Seniors

- Mean of the Difference between Spring Seniors and Fall Freshmen (25 students)

	P-value	< .05
Composite	0.022	+
Analysis	0.3445	
Inference	0.0096	+
Evaluation	0.4637	
Induction	0.119	
Deduction	0.0738	borderline