

## Placement Level Analysis of the California Community College System

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The current focus on basic skills and assessment for placement has created an environment in which it is valuable to ascertain how colleges are placing students in relation to the system as a whole. In April of 2009, I submitted a request to the research listserv maintained by the Research and Planning Group for California Community Colleges. I requested data on the placement levels of all students for the most recent fall term conforming to the following sample format:

Term: Fall 2007	English		Math		Reading		ESL	
<b>Cabrillo College</b>	%	N	%	N	%	N	%	N
Transfer level	32%	897	17%	427	53%	1480		
One level below transfer	44%	1225	39%	993	25%	696		
Two levels below transfer	22%	603	22%	567	13%	370	6%	4
Three or more below	2%	52	22%	566	8%	234	94%	68
<b>Auto Total</b>	100%	2777	100%	2553	100%	2780	100%	72

By June 2009, twenty three colleges had responded to the request. Most colleges (n=17) submitted data for fall 2008, with the rest submitting data for fall 2007 (n = 3), fall 2006 (n = 1), or for the full 2008-2009 academic year (n = 2). Counts from the two colleges with full year data were divided by two in order to provide an estimate of their activity in a single semester. All colleges provided information on English placements and all but one provided data on math placements. Eleven colleges provided data on reading placements and fifteen colleges provided information on ESL placement levels.

Overall (N=23)	English (N = 23)		Math (N = 22)		Reading (N = 11)		ESL (N = 15)	
<b>Overall Averages</b>	%	Placements	%	Placements	%	Placements	%	Placements
Transfer level	<b>26%</b>	20,680	<b>16%</b>	12,539	<b>33%</b>	12,782	<b>1%</b>	71
One level below	<b>32%</b>	24,976	<b>19%</b>	14,986	<b>36%</b>	13,921	<b>9%</b>	493
Two levels below	<b>29%</b>	22,528	<b>25%</b>	19,626	<b>24%</b>	9,136	<b>20%</b>	1,102
Three or more below	<b>13%</b>	9,845	<b>39%</b>	30,080	<b>7%</b>	2,895	<b>70%</b>	3,964
<b>Total</b>	100%	78,208	100%	77,231	100%	38,733	100%	5,629

The table above provides an estimate of the average placement levels for the entire California Community College system. A little more than one quarter of English placements are at transfer level while only 16% of math placements are at transfer level. One third of reading placements are for transfer-level courses. ESL placement levels are skewed to the lower levels of placement; thirteen of the fifteen colleges with ESL data did not place any students into transfer-level ESL classes, most likely because those colleges do not have transfer-level ESL curriculum. Additionally, eight of the fifteen colleges that provided ESL placement levels did not have any placements at one-level below transfer, again, most likely because of a lack of ESL curriculum at that level.

Large numbers of students placed into remedial classes: 42% of English placements; 64% of math placements; 31% of reading placements; and 90% of ESL placements were for courses at two or more levels below transfer level (i.e., basic skills or remedial coursework).

Simply looking at average placement levels may be somewhat misleading because there is substantial inter-college variation in placement levels. For example, one college placed only 2% of its students into transfer English while another placed 52% of its students into transfer level English.

The tables below summarize the variability of inter-college placement rates. The row average column in the following tables is somewhat different from the average placement level for all colleges provided on the previous page, particularly for ESL and reading, where many colleges did not offer coursework at all levels. The tables below note the number of colleges with data for a given level and then provide the average of just those colleges (i.e., the row average). This row average provides a somewhat different perspective in order to answer a somewhat different question. For instance, only three colleges provided data on transfer-level placements for ESL courses; out of all ESL placements reported by the 15 colleges with ESL placement data only 1% were at transfer-level, however among just the 3 colleges with transfer level data, the average is much higher (6%). The first perspective is an estimate of system wide incidence, the second focuses on just those colleges with the curricular capacity to place students into transfer-level ESL.

<b>English Placement Spread</b>			<b>English</b>		
	<b>N</b>	<b>Row Average</b>	<b>Min</b>	<b>Max</b>	<b>Std. Dev.</b>
Transfer level	23	26%	2%	52%	13.6%
One level below transfer	23	32%	7%	58%	12.7%
Two levels below transfer	23	29%	8%	56%	13.9%
Three or more levels below	19	20%	2%	57%	12.7%

<b>Math Placement Spread</b>			<b>Math</b>		
	<b>N</b>	<b>Row Average</b>	<b>Min</b>	<b>Max</b>	<b>Std. Dev.</b>
Transfer level	22	16%	0%	32%	9.6%
One level below transfer	22	19%	5%	50%	11.6%
Two levels below transfer	22	25%	8%	47%	12.4%
Three or more levels below	22	39%	12%	77%	24.2%

<b>Reading Placement Spread</b>			<b>Reading</b>		
	<b>N</b>	<b>Row Average</b>	<b>Min</b>	<b>Max</b>	<b>Std. Dev.</b>
Transfer level	11	33%	8%	53%	14.1%
One level below transfer	11	36%	23%	48%	7.9%
Two levels below transfer	11	24%	13%	37%	6.8%
Three or more levels below	8	10%	4%	36%	10.3%

<b>ESL Placement Spread</b>			<b>ESL</b>		
	<b>N</b>	<b>Row Average</b>	<b>Min</b>	<b>Max</b>	<b>Std. Dev.</b>
Transfer level	3	6%	2%	26%	12.1%
One level below transfer	7	20%	1%	70%	24.7%
Two levels below transfer	14	20%	2%	46%	12.1%
Three or more levels below	15	74%	10%	100%	25.8%

Variability in placement levels is quite large for this sample of 23 colleges. One college had over half of its English assessments place at three levels below transfer level, while another college placed over three quarters of its math assessments at three or more levels below transfer level. On the other hand, one college placed over half its test takers into transfer level English, while another placed nearly a third into transfer level math.

The standard deviation column in the tables on page two provides a sense of how dispersed scores are around the row average. The smaller the standard deviation, the more tightly college scores cluster around the average. Since the distribution of scores is approximately normally distributed in a “bell curve”, about 68% of colleges fall within one standard deviation above and below the average, while about 96% of colleges fall within plus/minus two standard deviations of the average.

It also interesting to note that many colleges do not have ready access to (or do not track) placement levels for reading and ESL; fewer than half of the colleges (48%) provided reading placement data and 65% provided ESL placement data. This may indicate a higher use of informed self-placement for these areas, as cut-score validation is not required when informed self-placement is used, resulting perhaps in lower demands for placement data.

Future research could enhance our understanding of assessment for placement by modeling how placement levels vary according to the instrument and multiple measures that are employed. It is likely that further research would find that the demographic and socioeconomic factors of each college’s service area are also associated the inter-college variability in proportions of students placed at different levels. Additionally, future research should examine how differences in student outcomes (English and math course success rates, graduation, transfer, etc.) relate to differences in placement rates.

### *Limitations*

There are limitations to the current research, primarily concerning the sample. With only 23 of the 110 CCC represented in this sample of convenience, our confidence in the accuracy of these numbers as representative of the system must be tempered. A confidence interval analysis can provide an estimate of our uncertainty. If we consider students to be the unit of analysis then our confidence in the representativeness of our sample as an indicator of system-wide values is strong. For example, the average proportion of students placing into transfer level English was 26%; because the 23 colleges provided data on 78,208 assessments (a large number) the 99% confidence interval is quite narrow – plus or minus 0.4%, or between 25.6% and 26.4%. In other words, out of one hundred samples of this size ( $n=78,208$ ) ninety-nine would be expected to have their proportion of transfer level English placements fall into the range of 26%, plus or minus  $\pm 0.4\%$ . According to this analysis, we have a very good approximation of the true system-level proportions.

However, because the sample was not drawn randomly, bias may be a larger problem than statistical uncertainty. Bias can adversely affect the accuracy of estimates. Due to non-random sampling, it could be possible that our sample over represents certain characteristics thereby creating a skewed estimate of the CCC as a whole. On the other hand, the sample does include a diverse set of colleges from around the state; there are large colleges and small colleges, urban colleges and rural colleges, reducing the likelihood of a strongly biased sample.

A final interpretative caution is that the assessment data in this paper concerns test results and not necessarily enrollments. Some students may assess but ultimately enroll at another institution or perhaps postpone college enrollment. The difference between the population assessed and the population that assesses and then enrolls may be small, however. At Cabrillo College, 95% of the students who took an assessment for placement also enrolled in classes.