

English Assessment Test Cut-Score Validation Study

CRC Research Office

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Background

The English assessment placement test at Cosumnes River College utilizes test cut-scores within writing and reading subjects to place students in the appropriate level of English writing and reading. These cut-scores are thought to indicate the minimum level of student preparedness required to perform at the given course level. In order for these cut-scores to be an accurate indication of student preparedness, they must have *consequential validity*. Consequential validity is defined as the extent to which a test or procedure results in a predefined desirable outcome. In this case, the desirable outcome is placement of a student *at the appropriate course level* (not too high or too low). The California Community College Chancellor's Office (CCCCO) requires that 75% of students be placed at the appropriate course level for cut-scores to have adequate consequential validity. With this requirement in mind, the Research Office, in conjunction with the English faculty and the dean of humanities and social sciences, sought to assess the consequential validity of the English assessment cut-scores and identify any potential disproportionate impact of test placement.

Method

Two surveys were designed on the basis of standard validation procedures outlined by the CCCC¹. A student survey was designed to ask students (1) how they placed in the course (e.g., through the assessment process or some other means) and (2) whether or not they were appropriately placed in the course (Appendix A). Students indicated their appropriateness of placement by checking one of three responses: "I should be in a course higher (more advanced) than this one" (placed *too low*); "I am in the right class" (placement at the *appropriate level*); or "I should be in a course lower (less advanced) than this one" (placed *too high*). The second survey took the form of a class roster that was generated from the Los Rios Student Information System (PeopleSoft). On this roster, *faculty* were asked to rate adequateness of placement for each student in their English courses by writing one of three symbols next to each name: "+" ("Student should be in a class higher (more advanced) than this one"; placed *too low*), "0" ("Student is in the right class"; placement at the *appropriate level*), or "-" ("Student should be in a class lower (less advanced) than this one"; placed *too high*). Instructors were provided a packet of surveys for each class with an enclosed letter containing instructions for administration (See Appendix B). A total of 2,492 student surveys and 89 faculty surveys were administered (response rates are summarized in the next section). Note that surveys were administered to students via email in ten online transfer level English writing courses (ENGWR 300).

After the surveys were completed, they were returned to the Office of Institutional Effectiveness. The first step in analysis was to evaluate the *construct validity* of the student/faculty surveys. A survey is thought to have construct validity if it measures what it is intended to measure. In this case, the surveys were supposed measure the adequate placement of a students in English. Next, the survey results were tabulated by placement level (See *Table 1* for a description of cut-scores, placement levels, and corresponding courses). In order for a cut-score within a given placement level to have consequential validity, 75% of students who placed in through the assessment process would need to be self-rated and rated by faculty as at the appropriate level.

¹ <http://extranet.cccco.edu/Portals/1/SSSP/Matriculation/Assessment/CutScore.pdf>

Table 1. *Accuplacer Placement Levels and Cut-Scores, Fall 2017*

Level	Subject/Cut-Score	Course Placement
1	0-27	ENGWR 42
2	28-51	ENGWR 58
3	52-78	ENGWR 101, ENGRD 110, ENGWR 109, ENGRD 113
4	79-120	ENGWR 300, ENGRD 310
5	106-120	ENGWR 480

Note. *The Accuplacer score is calculated by summing a student's Reading Comprehension and Sentence Skills score and dividing by 2.*

Results

Respondents

Of the 2,492 students, a total of 624 did not complete the student survey and were not rated by faculty. Moreover, a total of 497 students were rated by faculty but did not complete the student survey, and 87 students completed the survey but were not rated by faculty. Of the total number of administered surveys, only students who indicated that they had placed into a given English course by assessment were included in the present study. A total of 995 students completed the student survey and indicated that they had been placed in through the assessment process. Of these students, 923 were also rated by faculty. Thus, in later calculations 995 and 923 were used as denominators in determining the total percentage of adequately placed students for student and faculty ratings, respectively.

Construct Validity

Prior to calculating the percentage of appropriately placed students, the construct validity of the student and faculty surveys was assessed. Student ratings of the appropriateness of placement (too high, too low, or appropriate) were correlated with corresponding faculty ratings. If the two measures significantly correlated, then one could conclude that they were measuring the same construct, in this case the appropriateness of placement. The two ratings were significantly correlated, $\chi^2(4) = 90.407$, $p < .001$, such that there was 79.4% agreement between faculty and students on placement level appropriateness.

Consequential Validity

Next, the percentage of students who rated themselves and were rated by faculty as placed appropriately, too high, or too low was calculated by placement level (see *Table 2*). Overall, 80.8% of students were rated by faculty as at the appropriate level and 91.9% of students rated themselves as at the appropriate level; thereby exceeding the 75% threshold for appropriate placement. Both students and faculty ratings for placement level 4 (ENGWR 300, ENGRD 310) exceeded the threshold of 75% specified by the CCCCO (93.3% and 85.6%, respectively). The faculty-evaluated placement levels 1, 2, and 3 were below the threshold of 75%. At level 1, 21.7% of the faculty and 22.2% of the students indicated that the students were placed *too low* (they should be in a higher, more advanced, course). Student ratings for appropriate level were above the threshold of 75% for all but the highest level.

Table 2. Student/Faculty Ratings of Placement Level by Assessment Level.

Level	Appropriate		Too High		Too Low		Total Responses	
	Student	Faculty	Student	Faculty	Student	Faculty	Student	Faculty
1	75.0%	<u>65.2%</u>	2.8%	13.0%	22.2%	21.7%	36	23
2	93.1%	<u>69.0%</u>	1.7%	15.5%	5.2%	15.5%	58	58
3	91.0%	<u>72.7%</u>	1.6%	13.6%	7.4%	13.6%	244	242
4	93.3%	85.6%	3.3%	8.3%	3.4%	6.1%	646	589
5	<u>72.7%</u>	100.0%	9.1%	0.0%	18.2%	0.0%	11	11
Overall	91.9%	80.8%	2.8%	10.2%	5.3%	9.0%	995	923

Note. The “Appropriate” column presents the percentage of students who rated themselves or were rated by faculty as at the appropriate level. The “Too Low” column presents the percentage of students who rated themselves or who were rated by faculty as having been placed too low (should be in a higher course). The “Too High” column presents the percentage of students who rated themselves or who were rated by faculty as having been placed too high (should be in a lower course). Italicized/underlined percentages are below the CCCC established threshold of 75% for appropriate placement.

Disproportionate Impact of Test Placement

A *Proportionality Index* (PI) was calculated in order to assess disproportionate impact of assessment test placement within specific demographic groups. This analysis used only students who were placed by assessment test. The PI was calculated for a demographic group by dividing the group’s proportion representation among students who tested into a given English course by that group’s proportion representation in the overall population of students who placed by assessment test. In this case, a PI ratio of one would indicate that the subgroup is represented at the same rate in a given placement level as they are in the overall placement test population. A ratio of less than one indicates that the subgroup is underrepresented in the level compared to their representation in the overall population, and a ratio of more than one indicates an overrepresentation. *Table 3* displays the Proportionality Index by English level and student subgroup (see next page).

Analysis revealed that there was disproportionate impact of test placement among ethnic groups. Among students who placed by assessment test, African American students were underrepresented in the higher English levels 4 and 5 and were 2.2 times more likely to be placed in the lowest level of English. Asian/Filipino/Pacific Islander students were slightly overrepresented in English levels 2 and 5. White students were underrepresented in the lower levels (levels 1, 2, and 3) and 2.6 times more likely to be placed into the highest level of English (Caution: The number of students placed at level 5 ($N=11$) is much smaller than the other courses; therefore, findings of disproportionate impact may be overstated).

There were also distinctive differences by gender and age group among students who placed by assessment test. Students who are female were slightly overrepresented in the lowest level of English, but noticeably underrepresented in levels 2 and 5. The opposite was true for students who are male; they were underrepresented in the lowest English level and slightly overrepresented in level 2. Students whose gender was not reported were underrepresented for English level 4; they were and two times more likely to be overrepresented in level 2. (Caution: The number of students whose gender was unknown is much smaller than their male and female peers; therefore, findings of disproportionate impact may be overstated).

When comparing age groups, students who are 25 and older are more than 2.57 times more likely to be placed in the lowest English level. Students under the age of 25 were slightly overrepresented in the highest level of English.

Table 3. *Proportionality Index: Accuplacer English Writing/Reading Levels by Student Subgroups – Race/Ethnic Groups, Gender, and Age Group*

Proportionality Index Table	English Placement Level				
Student Subgroup	1	2	3	4	5
African American	2.23	1.23	1.70	0.67	0.00
Asian/Filipino/Pacific Islander	0.99	1.23	0.92	1.00	1.63
Hispanic/Latino	1.05	0.98	1.14	0.97	0.00
Multi-Race/Unknown/Other	0.36	0.45	1.08	1.07	0.00
White	0.53	0.74	0.51	1.20	2.60
Female	1.24	0.70	0.96	1.03	1.11
Male	0.79	1.27	1.02	0.98	0.93
Unknown	0.00	2.00	1.69	0.72	0.00
Under 25	0.83	1.01	0.99	1.01	1.11
25 or older	2.57	0.89	1.07	0.91	0.00

Note. A zero value indicates the student subgroup was not represented in the outcome/level. Due to small sample size (N=4), Native American students were excluded from this analysis.

Conclusions

Overall, 80.8% of students were rated by faculty as at the appropriate level and 91.9% of students rated themselves as at the appropriate level; thereby exceeding the 75% threshold for appropriate placement. However, faculty ratings of students' placement did not meet the threshold for the lower levels of English (levels 1, 2, and 3); and, students self-rating for appropriate placement into the highest level of English did not meet the threshold of 75%.

Importantly, there also appears to be disproportionate impact in the placement of specific student groups. Students who are African American or Hispanic/Latino, female students, and students who are older (25 or older) were more likely to be placed by assessment test into basic skills English writing and reading. Moreover, African American were significantly less likely to be placed in the higher English levels (levels 4 and 5). In light of these findings, the English department should conduct a study to explore the impact of changing cut-scores on these equity differences in test placement. Finally, it should be noted that the sample sizes were low level 5 (N=11), and therefore may not adequately reflect the appropriateness of test placement.

Recommendations

Given the results of this study, it is the recommendation of the Office of Institutional Effectiveness that the English department engage in one or more of the following:

- Evaluate the implementation of other multiple measures (e.g., using self-reported high school GPA) to enhance consequential validity and minimize disproportionate impact.

Appendix A
Cosumnes River College Test Validation Survey

Please complete this survey even if you have filled it out for another class. Your responses will be kept strictly confidential.

Name: _____ **English Course:** _____

ID:

0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

1. How did you qualify for this class?

- A. Cosumnes River College assessment placement
- B. Assessment placement from another Los Rios college (e.g. Sacramento City, American River, Folsom Lake)
- C. Completed prerequisite course at CRC
- D. Completed prerequisite course at another college
- E. Successfully challenged the prerequisite
- F. Other (please specify) _____

2. Which of the following is most true of your placement in this class?

- A. I should be in a course higher (more advanced) than this one.
- B. I am in the right class.
- C. I should be in a class lower (less advanced) than this one.

Appendix B

Dear English Faculty,

This semester we are conducting a validation study of the English assessment/placement test. To accomplish this task, two surveys need to be administered: one for the students and one for the English faculty.

Between October 23rd and November 3rd, **please distribute and collect the enclosed student survey.** The survey should take about 10 minutes of class time to complete. The survey will ask students how they qualified for the class and if they feel they were appropriately placed in the class. This method of placement validation is recommended by the California Community Colleges Chancellor's Office. The survey data will be analyzed and reported by the Research Office. Prior to administering the student survey in your class, please read or paraphrase the following statement:

"I am about to give a quick survey that will ask you how you were placed into this class and if you feel you were appropriately placed. You will need to provide your name, student I.D., and the name of the English course in which you are currently enrolled [i.e., ENGWR 42, ENGWR 58, ENGWR 101, etc.]. Then answer the two questions that follow. Please only select one answer per question.

The results from this survey help validate our English placement tests so that a student's placement score accurately reflects the skills needed in different class levels. Your participation is appreciated and your responses will be kept strictly confidential."

As faculty, your survey is in the form of a roster. Please use it to indicate the preparedness of each student in your class. To do this, please place one of the following symbols next to each student's name on the provided roster:

Symbol	Meaning
"+" (a plus sign)	Student should be in a class higher (more advanced) than this one.
"0" (a zero)	Student is in the right class.
"-" (a minus sign)	Student should be in a class lower (less advanced) than this one.

Please return these materials no later than Wednesday, November 8, 2017:

To the Research Office, LRC 121. Please contact Paul Mainz at 691-7723/meinzp@crc.losrios.edu or Sabrina Sencil at 691-7835/sencils@crc.losrios.edu with any questions. Thank you very much for participating in the study.

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