Exploring Placement for English and Reading Courses at Cerro Coso Community College

In spring 2009 the Cerro Coso Community College (CC) Counseling Office contacted the District Director of Institutional Research to request data to inform faculty on possible cut scores to adopt for placement into English and Reading courses using Accuplacer Reading Comprehension and/or the Accuplacer Sentence Skills computer based exams. During the prior three years, since July 2006, the college has been using a combination of placement test scores (Companion and Accuplacer) and essay ratings by two trained faculty readers per student to create a composite score for placement into the following nine courses in English and Reading, as shown in Table 1.

Table 1. Current Cut Scores by Course (2008-2009)

Accuplacer Reading Comprehension (raw score)	Recommended Course Placement
0 – 34	READ C036 – Developmental Reading
35 – 63	READ C046 – Improving Reading Skills
64 – 82	READ C056 – College Reading
83 – 120	No Class Required
Accuplacer Composite Score (combined weighted score)	Recommended Course Placement
25 – 36	ENGL C020 –Literacy Skills
37 – 53	ENGL C030 – Basic Writing Skills
54 – 65	ENGL C040 – Improving Basic Writing Skills
66 – 78	ENGL C070 – Introductory Composition
79 – 100	ENGL C101- Freshman Composition

Cohort methodology: Data on student test scores, test dates, placement levels, and academic history were pulled from the college's Banner system via ODS reports designed for this study. Criteria identified all students with placement test scores taken between August 2006 and May 2009. All student enrollment activity with grades, including drops and withdrawals, were pulled for the eight academic terms within the study, from spring 2007 to summer 2009. Testing and academic history records were joined by student ID to build the original cohort of all students with test dates prior to the start of the course, and receiving a final grade of A, B, C, D, F, CR, NC, P, NP, DR and W. Incomplete and delayed grades were excluded from the start, then after exploring the data, students with a DR or W grade in their first attempt at one of the target

courses were also excluded. Student characteristics were added for age at term, gender, ethnicity, and disabled status. Descriptive and inferential statistics will be applied to inform the college regarding possible cut scores from the Accuplacer tests without additional measures.

Target Courses: The following table shows the course success rates for the nine target courses during the eight semesters of this study. The proposed cut scores will need to provide students a greater chance of success in each course than the rates shown below.

Table 2. Selected Course Success Rates (Spring 2007 to Summer 2009)

| Course	Total Grades	# Success	Success Rate
ENGLC020 –Literacy Skills	206	78	37.9%
ENGLC030 – Basic Writing Skills	289	161	55.7%
ENGLC040 – Improving Basic Writing Skills	702	413	58.8%
ENGLC070 – Introductory Composition	957	488	51.0%
ENGLC101 – Freshman Composition	767	494	64.4%
READC036 – Developmental Reading	112	67	59.8%
READC046 – Improving Reading Skills	184	82	44.6%
READC056 – College Reading	266	154	57.9%

Total grades include A, B, C, D, F, CR, NC, P, NP, I and W. Success is the number/percent of students with grades that successfully pass the course with a C or better (A, B, C, CR, P). These data exclude all DR grades.

Additional data show that success rates in the selected courses vary over the last eight years, see table and graph below.

Table 3. Selected Course Success Rates by Academic Year

Course	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
ENGL C020	54.8%	49.3%	43.7%	38.1%	32.4%	38.9%	35.3%	37.5%
ENGL C030	50.7%	52.7%	51.1%	50.0%	55.0%	57.7%	53.3%	56.9%
ENGL C040			57.9%	52.6%	49.7%	53.4%	61.1%	58.4%
ENGL C070	55.4%	55.0%	58.4%	55.7%	53.0%	55.7%	49.5%	52.9%
ENGL C101	56.9%	65.4%	65.9%	63.0%	58.1%	62.4%	63.9%	63.4%
READ C036			54.8%	58.8%	43.4%	50.0%	69.7%	57.4%
READ C046			44.4%	53.4%	63.0%	58.0%	44.6%	42.6%
READ C056					64.7%	62.6%	64.9%	37.8%

Graph 1. Selected Course Success Rates by Academic Year
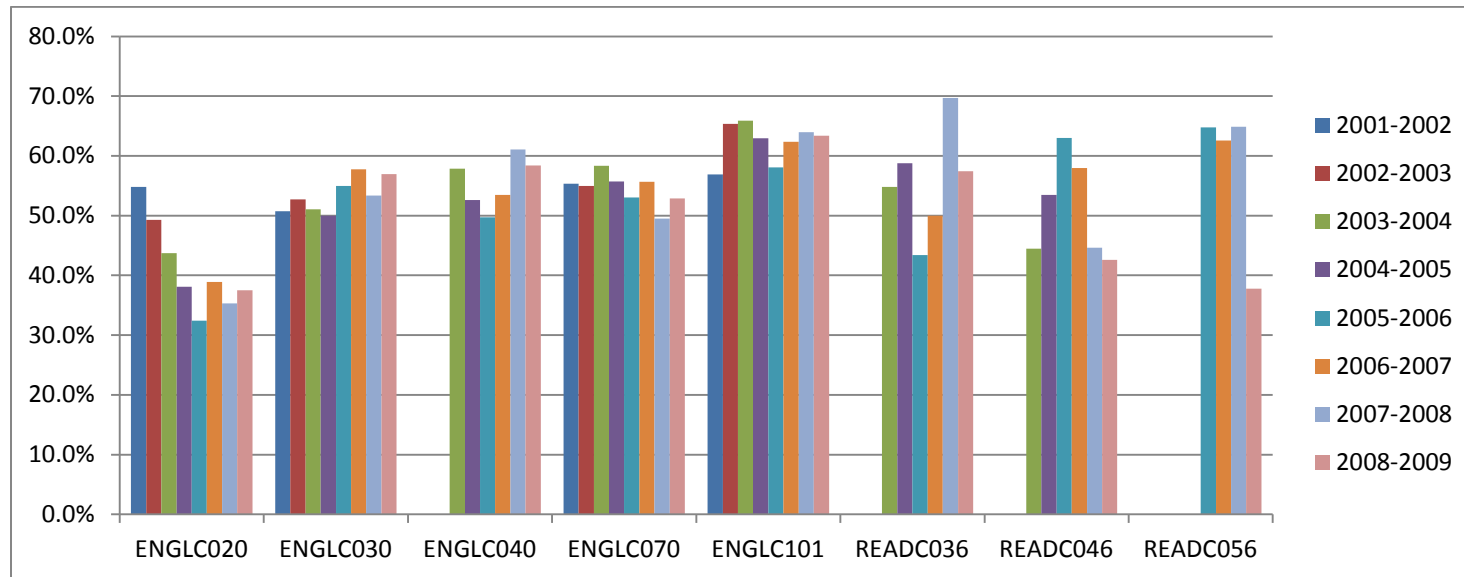
The researcher is unaware of any changes to curriculum other than course titles during the past eight academic years. As of fall 2009 ENGL C020 is no longer active in the college catalog. No students selected for this study enrolled in ENGL C020.

Student Characteristics: Most students in the cohort completed both the Accuplacer Reading Comprehension (Test code 902) and Accuplacer Sentence Skills (Test code 903) on the same day, between August 2006 and July 2009. The study examines student performance in their first English and/or Reading course taken after assessment testing, with a final grade of A, B, C, D, F, CR, NC, P, or NP. This provides an unduplicated headcount of 608 students, described below with comparisons to the overall student body for Cerro Coso Community College from the state chancellor's data mart.

The selected cohort includes enrollments in the target English and Reading courses from summer 2006 to summer 2009 with only a few students taking courses in the 2006-07 academic year and many more taking classes in the 2008-09 academic year; therefore demographic comparisons are made for the three semesters in 2008-09. The selected cohort is somewhat reflective of the college-wide student body in terms of gender

and ethnicity. The cohort is 48-55% female and the student body is 60-64% female. The cohort varies from 55-68% White Non-Hispanic and the student body is 66-69% White Non-Hispanic. Other ethnic groups show similar patterns with African American students (cohort is 0-6%, student body is 4%), Asian/Filipino/Pacific Islanders (cohort is 4-5%, student body is 5-6%), and Hispanic students (cohort is 11-18%; student body is 12-13%). The cohort has more students age 19 or younger (43-67%) compared to 19-23% in the student body. Finally, 5-7% of cohort students are disabled with a similar percent of disabled students college-wide. Differences by student characteristics will be considered for disproportionate impact later in this study.

Results: The next step is to check the test scores for normal distribution. Data were imported into SPSS and frequency distributions were performed on all variables, including raw test scores. Both tests show normal distributions with different means and ranges shown below.

Table 4. Placement Test Statistics

Test	Range	Mean	Std. Deviation
902 Accuplacer Reading Comprehension	27 to 119	71.95	21.32
903 Accuplacer Sentence Skills	31 to 120	81.45	19.44

The inferential analysis used a step-wise approach working with the original cohort, then selecting variables and cases that show significance at the $p < .05$ level. No significant results were found for reading test scores in reading classes. This suggests a need to re-examine the Accuplacer Reading Comprehension test for content validity with the college's reading courses, although the researcher did not test for significance of writing test scores in reading classes, as of this draft/due date.

Both Accuplacer tests show significant differences for informing English course placement. Statistical testing found a significant difference in student success by writing test score for all courses ($X^2 = .406$, $p < .05$) and comparing means, $t(492)=2.41$, $p=.016$, of successful versus non-successful students based on reading tests in English courses. Based on this analysis, the researcher created a combined score adding the raw scores for both reading and writing tests, and then re-ran the analysis. The combined score also has a normal distribution.

Table 5. Combined Score Statistics

Test	Range	Mean	Std. Deviation
Combined test scores	65 to 234	163.5	34.8

Using the mean combined score and standard deviation, the researcher divided the range into four levels: Lowest (2 std dev below the mean), Low (1 std dev below the mean), Medium (1 std dev above the mean), and Very High (2 std dev above the mean). Statistical tests show the Medium level is significant (X^2= .244, p < .05) and for ENGL C030 (X^2= .311, p < .05).

The resulting probability of success in each course, for students in the "combined level" are shown in Table 6 adjacent to the existing course success rates from Table 2. The researcher used boldface to indicate the *suggested* cut score range for each course. Department faculty and college administrators make the final determination based on many factors, including the potential effect on access, success, and disproportionate impact of students based on age groups, gender, ethnicity, and disabled status.

Table 6. Proposed Levels with Combined Score

Combined Level	Course	Probability of Success	Course Success Rate
Lowest (65-148)	ENGL C030	57.1%	55.7%
Lowest (65-148)	**ENGL C040**	**72.1%**	**58.8%**
Lowest (65-148)	ENGL C070	50.0%	51.0%
Low (149-163)	ENGL C030	84.2%	55.7%
Low (149-163)	ENGL C040	69.6%	58.8%
Low (149-163)	**ENGL C070**	**63.3%**	**51.0%**
Medium (164-198)	ENGL C030	90.9%	55.7%
Medium (164-198)	ENGL C040	70.2%	58.8%
Medium (164-198)	ENGL C070	52.9%	51.0%
Medium (164-198)	**ENGL C101**	**76.5%**	**64.4%**
Very High (199-234)	ENGL C040	84.6%	58.8%
Very High (199-234)	ENGL C070	72.7%	51.0%
Very High (199-234)	ENGL C101	90.9%	64.4%

Students with a combined score below 65 should be directed to ENGL C030.

Students with a combined score between 65 and 148 should be directed to ENGL C040.

Students with a combined score between 149 and 163 should be directed to ENGL C070.

Students with a combined score between 164 and 198 should be directed to ENGL C101, with those scoring above 198 eligible for any English course.

The above proposed cut scores show no significant differences for students by age group or gender. There is a statistically significant difference for ethnic groups (X^2= .144, p < .05) and disabled student status (X^2= .139, p < .05). A disproportionate impact study can be conducted at the department's request. To further inform the college regarding placement with Accuplacer instruments, the College Board (2005) and others recommend giving the placement exam to students at the end of the class, as a study in student performance (grade) and exit skills (test score).