

Statistical Validation for English-100 as a Prerequisite for Humanities-003

Los Medanos College

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Introduction

Prerequisites help ensure that students have the necessary skills and academic background to succeed in a course. By imposing prerequisites, student *success* in the course is expected to increase. Matriculation regulations state that “*In order to show that a prerequisite is necessary for success in a particular course, the validation procedure must ensure that a student who has not met the prerequisite is highly unlikely to obtain a satisfactory grade in the course.*”

The purpose of this study is to explore the potential student benefit of requiring college level English (English 100) for enrolling in Humanities 003 (HUMAN-003), a course that meets the GE requirement for the associate degree at Los Medanos College and meets the Humanities requirement for UC and CSU. Course *success and retention* rates in HUMAN-003 are examined as a result of imposing English 100 as a prerequisite. The enrollment impact for pre-requisite implementation is also discussed.

Method

For this prerequisite validation study, the recommended “Design 23” of the Matriculation Evaluation: Phase III Local Research Options (June, 1992) was employed. Briefly, this design explores the statistical relationship between a course outcome and its respective prerequisite. The *success* and *retention* rates of students in Humanities 003 with English 100 prior to enrollment in Humanities 003 are compared to those of students with pre-college English (English 90), Basic Level English (English 70) and to those students with no English prior to Humanities 003.

Operational Definitions: The operational definitions for course *success* and *retention* are those recommended by the Research Planning Group for California Community Colleges (June 1996).

Course Success: Student succeeds in the course to end of term. A,B,C,CR grade notations. Measurement: Percent of students successful in course out of total enrolled in course. The rate is calculated by dividing the numerator (number of students with A,B,C,CR) by the denominator (number of students with A,B,C,D,F,CR,NC,W,I).

Course Retention: Student is retained in the course to end of term. A,B,C,D,F,CR,NC,I grade notations. Measurement: Percent of students retained in the course out of the total enrolled in the course. The rate is calculated by dividing the numerator (number of students with A,B,C,D,F,CR,NC,I) by the denominator (number of students with A,B,C,D,F,CR,NC,W,I).

Samples: All students who enrolled in a Humanities 003 course from fall 2003 to fall 2006 semesters were selected for this study. This selection of classes yielded a total sample of 213 students (unduplicated). This sample was split further into the following groups according to the students' level of English preparation:

- GROUP 1 = students who successfully completed English 100 prior to Enrolling in HUMAN-003 (n=125).
- GROUP 2 = Students who successfully completed only English 90 prior to enrolling in HUMAN-003 (n=15).
- GROUP 3 = Students who successfully completed only English 70 prior to enrolling in HUMAN-003 (n=1).
- GROUP 4 = Students who have NOT completed English 70, 90, or 100 at LMC (n=72).

Groups 2 and 3 are not big enough to provide results with statistical power. So, findings from these groups should not be generalized.

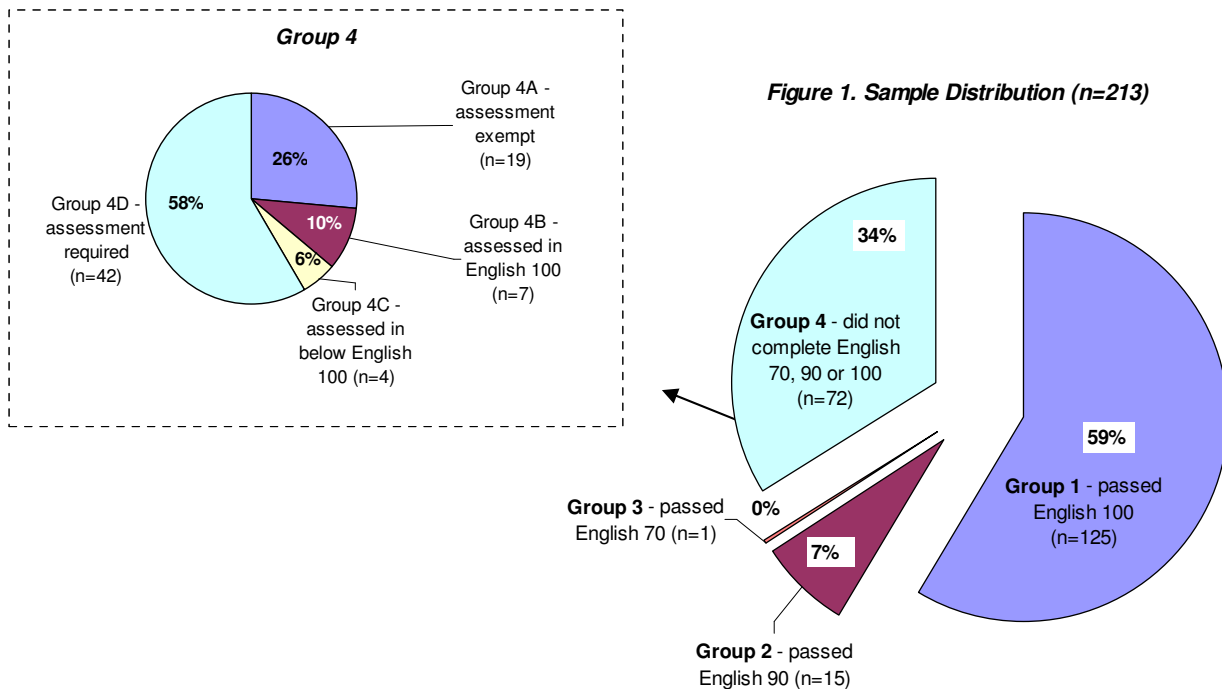
To better understand the level of English preparation of students who have not completed any English at LMC (GROUP 4), they were further split according to the following assessment categories:

- GROUP 4A = Assessment exempt based on district criteria (n=19).
- GROUP 4B = Assessed in English 100 but chose not to enroll in an English course (n=7).
- GROUP 4C = Assessed in below English 100 but chose not to enroll in an English course (n=4).
- GROUP 4D = Assessment required (students have not been assessed) (n=42).

Again, subsets B and C of Group 4 are not big enough to provide conclusive results.

The distribution of students' level of English preparation for ALL 213 students in the sample is displayed in Figure 1. Fifty-nine percent (59%) of the students who enrolled in Humanities 003 have completed and passed ENGLISH 100 prior; 34% had not completed English 70, 90 or 100 at LMC (19 of these are exempt); 7% have completed and passed ENGLISH 90 ONLY; and only one student had completed and passed ENGLISH 70 ONLY. This student will not be observed in the analysis.

Note: When students are analyzed by semester, the sample size of 213 will change to 222. This is due to duplicated counts (student re-enrolling in class during the time period observed).

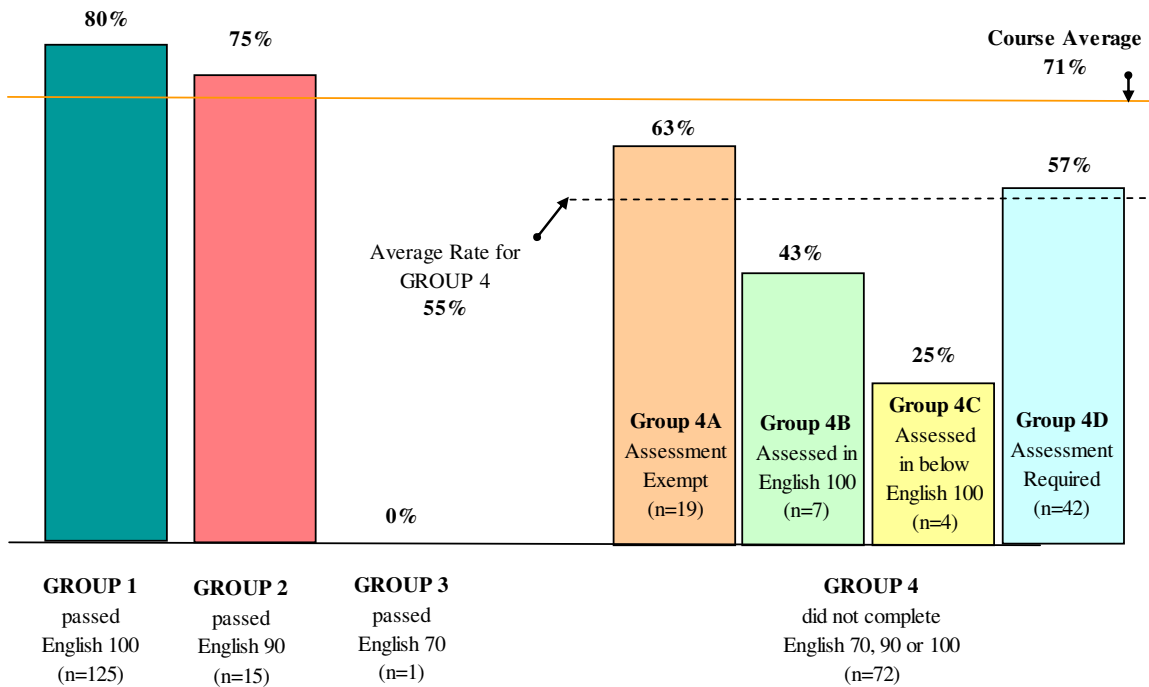


Data Analysis: All student information was collected from the college’s Research Data Warehouse.

Results

Course Retention: When controlling for student’s level of English preparation, differences were found in course retention rates for HUMANITIES 003. Students who successfully completed ENGLISH 100 (GROUP 1) and students who completed English 90 have higher retention rates than those students who did not complete any English course (Group 4), including exempt students (Group 4A) and have higher retention rates than the course average (71%). The course retention rate for students with ENGLISH 100 is 80% -- nine percent points higher than the course average; the retention rate for students with ENGLISH 90 is 75% (4% points higher from the average of 71%) but 5% points lower than the rate of students with ENGLISH 100; The average rate for students with NO ENGLISH at LMC (GROUP 4) is 55% -- 16 points lower than the class average. Within this group, students who were exempt from assessment (group 4A) are retained at the rate of 63%, the highest rate in this group, but still lower than the class average. Of the four students who assessed below English 100 and enrolled in n Humanities 003, only 1 (25%) was retained in the class.

**Figure 2. Course Retention in Humanities 003 by English Level Preparation:
Fall 2003 to Spring 2006 Student Cohorts Combined**



Reliability of Findings (Course Retention by Semester Cohort): Results for each of the student cohorts (by fall semesters) showed that students who have successfully completed ENGLISH 100 prior to enrolling in HUMANITIES 003 have higher retention rates than:

- 1) The course average (Figure 3),
- 2) Students who have only completed English 90 (Table 1),
- 3) All students with no English prior to Humanities 003 (Group 4).

Figure 3. Course Retention Rates in HUMANITIES 003 of Students with Prior Successful Completion of English 100: Fall 2003 to Fall 2006 Student Cohorts

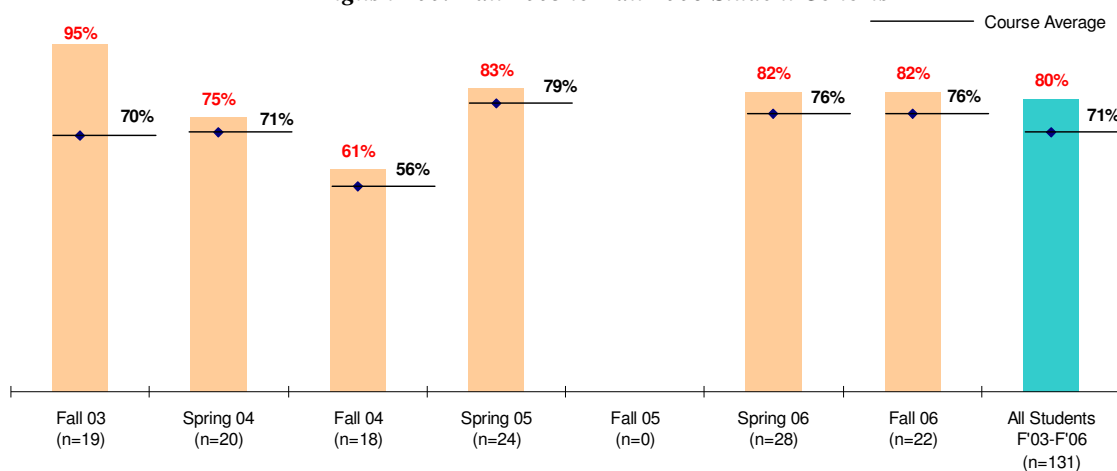


Table 1. Course Retention Rate of Students in Humanities 003: Group of English Level Preparation by Semester cohort

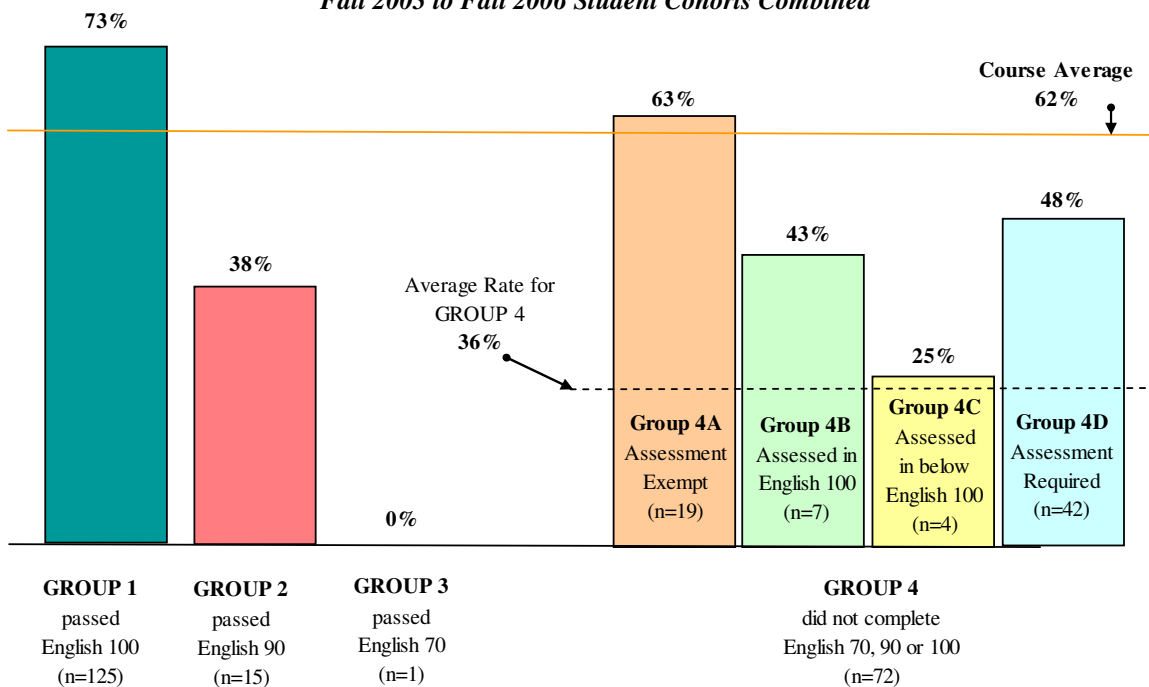
Group	Fall 03		Spring 04		Fall 04		Spring 05		Fall 05		Spring 06		Fall 06		All students F'03-F'06	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
(1) English 100	19	95%	20	75%	18	61%	24	83%	0	-	28	82%	22	82%	131	80%
(2) English 90	2	50%	2	50%	1	0%	0	0%	0	-	6	67%	5	100%	16	75%
(3) English 70	1	0%	0	0%	0	0%	0	0%	0	-	0	0%	0	0%	1	0%
(4) No English:																
• (4A) Assessment Exempt	5	40%	1	100%	3	33%	4	75%	0	-	3	67%	3	100%	19	63%
• (4B) Assessed in English 100	0	0%	1	0%	0	0%	1	0%	0	-	2	100%	3	33%	7	43%
• (4C) Assessed in BELOW English 100	1	0%	0	0%	2	50%	0	0%	0	-	1	0%	0	0%	4	25%
• (4D) Assessment Required	9	56%	10	70%	12	50%	4	75%	0	-	5	60%	4	25%	44	57%
Overall Class Rate	37	70%	34	71%	36	56%	33	79%	0	-	45	76%	37	76%	222	71%

Course Success: Significant differences in course success rates in Humanities 003 were found between students WITH and WITHOUT ENGLISH 100. The success rate of students with ENGLISH 100 prior to enrolling in Humanities 003 is greater than the success rate of students without ENGLISH 100, except for the rate of those students who have been exempted from assessment -- Figure 4 -- (most students who are exempt from assessment have taken college-level English at another college or have an Associate or Bachelor's degree when enrolling at LMC).

The success rate in Humanities 003 for all students in the sample (overall course success rate) is 62%. The success rate in Humanities 003 for students with ENGLISH 100 increases to 73% -- an 11 point increase. The success rate for students with ENGLISH 90 ONLY decreases to 38% -- 24 points below the class average and 35 points below the rate of students with ENGLISH 100.

As for students with NO ENGLISH AT LMC (GROUP 4), differences exist within these students. Students who have been assessment exempt (Group 4A) have higher rates than all other students in Group 4 and they have higher success rates than the course average and than students who have successfully completed English 90 -- Group 2 (figure 4).

**Figure 4. Course Success Rate in Humanities 003 by English Level Preparation:
Fall 2003 to Fall 2006 Student Cohorts Combined**



Reliability of Findings (Course Success by Semester Cohort): Course success rate differences were consistently found between students WITH and WITHOUT ENGLISH 100 even when the data was examined by semester cohorts (Table 2). Results for each of the student cohorts showed that students who have successfully completed ENGLISH 100 prior to enrolling in Humanities 003 have higher course success rates than:

- 1) the course average (Figure 5),
- 2) students who have completed ENGLISH 90 ONLY,
- 3) students who require assessment, and
- 4) Students who have not completed an English class at LMC.

It is important to note that when the sample of 213 students is split by semester cohorts and each semester cohort is further split by English level, some of the samples are extremely reduced to the level that statistical power is lost. For example, sample sizes for students with ENGLISH 90 ONLY, ranges from 1 to 6 students, and the samples of assessment exempt students also range from 0 to 5 students (Table 2).

Figure 5. Course Success Rates in HUMAN 003 of Students with Prior Successful Completion of English 100: Fall 2003 to Fall 2006 Student Cohorts

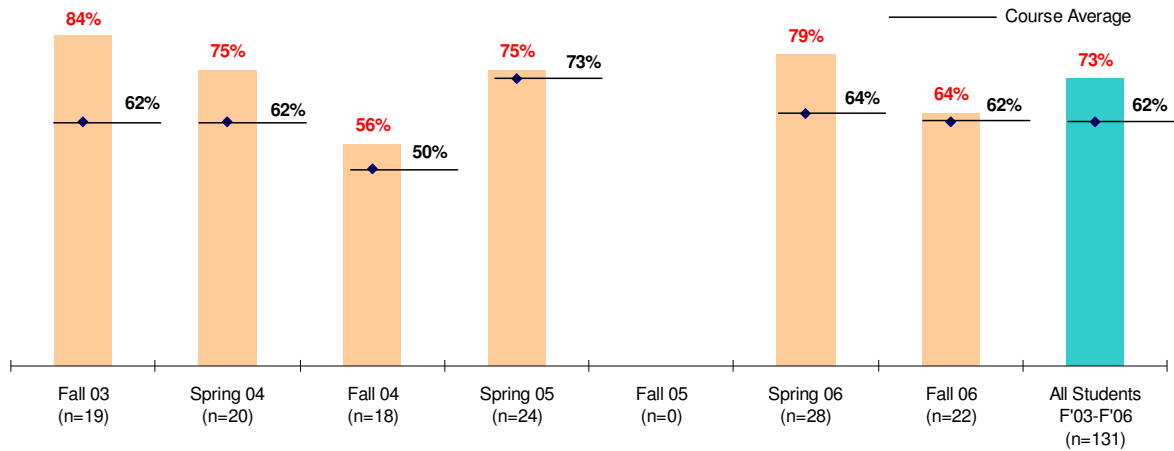


Table 2. Success Rate of Students in Humanities 003: Group of English Level Preparation by Semester Cohort

Group	Fall 03		Spring 04		Fall 04		Spring 05		Fall 05		Spring 06		Fall 06		All students F'03-F'06	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
(1) English 100	19	84%	20	75%	18	56%	24	75%	0	-	28	79%	22	64%	131	73%
(2) English 90	2	50%	2	0%	1	0%	0	0%	0	-	6	17%	5	80%	16	38%
(3) English 70	1	0%	0	0%	0	0%	0	0%	0	-	0	0%	0	0%	0	0%
(4) No English:																
• (4A) Assessment Exempt	5	40%	1	100%	3	33%	4	75%	0	-	3	67%	3	100%	19	63%
• (4B) Assessed in English 100	0	0%	1	0%	0	0%	1	0%	0	-	2	100%	3	33%	7	43%
• (4C) Assessed in BELOW English 100	1	0%	0	0%	2	50%	0	0%	0	-	1	0%	0	0%	4	25%
• (4D) Assessment Required	9	44%	10	50%	12	50%	4	75%	0	-	5	40%	4	25%	44	48%
Overall Class Rate	37	62%	34	62%	36	50%	33	73%	0	-	45	64%	37	62%	222	62%

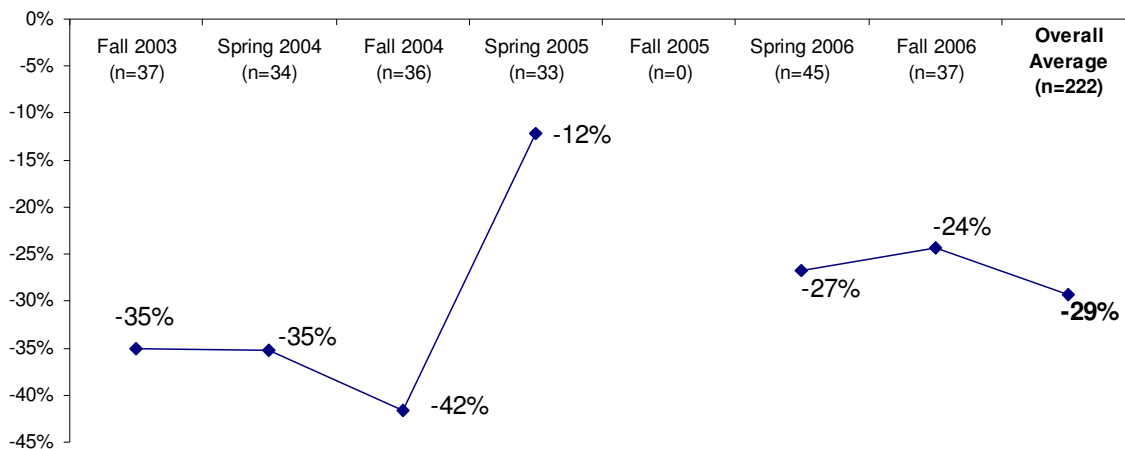
Discussion

The purpose of this study was to explore the potential student benefit of requiring college level English (ENGLISH 100) for enrolling in Humanities 003. Similar to a previous prerequisite validation study conducted for Humanistics 2LS (January, 1998), the results for this study indicate that students with college level experience (ENGLISH 100) have higher course *success* and *retention* rates than students without ENGLISH 100. The greatest benefit to students by imposing ENGLISH 100 as a prerequisite to HUMANITIES 003 would be course *success*. An estimated 11% points increase in course success rate would be expected. Course *retention* rate would increase by 9% points.

Another implication that would occur by imposing English 100 as a prerequisite to Humanities 003 would be an estimated decrease in student enrollment in Humanities 003 of 29% (Figure 6). This decrease would be the result of excluding the following students from enrolling in Humanities 003:

- 1) Students who have been assessed but have not enrolled in an English class at LMC,
- 2) Students who require assessment,
- 3) Students who only completed and passed ENGLISH 70,
- 4) Students who only completed and passed ENGLISH 90.

Figure 6. Student Enrollment Drop by Instituting English 100 as a Prerequisite to HUMAN 300



It is important to note that students with English 90 ONLY are retained in Humanities 003, but don't necessarily succeed. In fact, students who are assessment exempt have higher success rates than students who passed English 90 prior to enrolling in Humanities 003.

Conclusion

Requiring ENGLISH 100 prior to Enrolling in HUMANITIES 003 would benefit students in their success of the course by 11% points increase from the course average, but there would be a drop in enrollment of an estimated 29% average.

References

Good Practice for the Implementation of Prerequisites The Academic Senate for California Community Colleges, Spring 1997.

Matriculation Evaluation: Phase III Local Research Options. Community College League of California, California Community Colleges, Southern California Community College Institutional Research Association, and NOR CAL Community College Research Group, June 1992.

Statistical Validation for English 10S as a Prerequisite for Humanistic Studies 2LS. Office of Institutional Research, Los Medanos College, January 1998.