

Statistical Validation for English 10S as a Prerequisite for Humanistic Studies 2LS

Los Medanos College

January 1998

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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 10S) for enrolling in Humanistic Studies 2LS (HUMST 2LS), a graduation requirement for the associate degree at Los Medanos College. Course *success and retention* rates in HUMST 2LS are examined as a result of imposing English 10S as a prerequisite. HUMST 2LS is a capstone course, in which students investigate controversial social issues. Students in HUMST 2LS are required to write a 20-25-page paper in which they demonstrate a problem solving approach to a complex ethical issue.

Method

For this prerequisite validation study, the recommended “Design 23” of the Matriculation Evaluation: Phase III Local Research Options was used. Briefly, this design explores the statistical relationship between a course outcome and its respective prerequisite. The *success* and *retention* rates of students in Humanistics 2LS with English 10S prior to enrollment in Humnastics 2LS are compared to those of students with pre-college English (English 9) and Basic Level English (English 7). Chi-Square is employed to determine the significant differences between proportions.

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).

Sample: All students who enrolled in a Humanistic Studies 2LS course from Fall 1993 to Fall 1996 semesters were selected for this study. A sample of 1,871 students was identified. The sample was split into the following groups according to the students' level of English preparation:

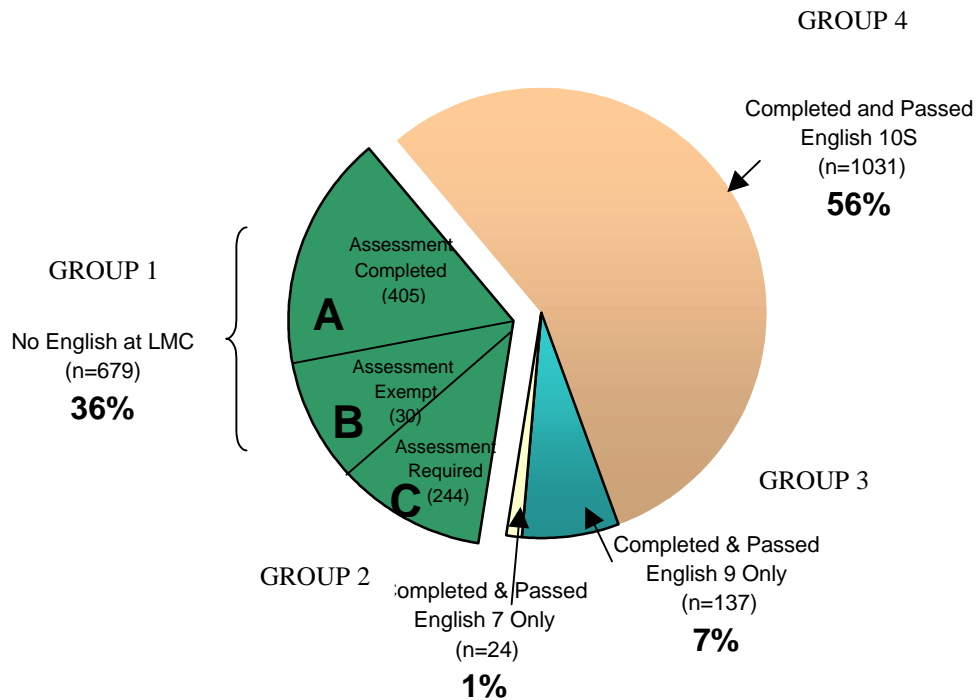
- GROUP 1 = Students who have NOT completed English 7, 9, or 10S at LMC (n=679).
- GROUP 2 = Students who successfully completed only English 7 prior to enrolling in HUMST 2LS (n=24).
- GROUP 3 = Students who successfully completed only English 9 prior to enrolling in HUMST 2LS (n=137).
- GROUP 4 = students who successfully completed English 10S prior to Enrolling in HUMS2LS (n=1031).

To better understand the level of English preparation of students who have not completed any English at LMC (GROUP 1), they were further split according to the following assessment categories:

- GROUP 1A = Assessment completed but chose not to enroll in an English course – n=405.
- GROUP 1B = Assessment exempt (e.g., English was taken at another college) – n=30.
- GROUP 1C = Assessment Required (students have not been assessed) – n=244.

The distribution of students' level of English preparation for ALL 1,871 students in the sample is displayed in Figure 1. Fifty-six percent (56%) of the students who enrolled in Humanistic Studies 2LS have completed and passed ENGLISH 10S prior; 36% have had NO ENGLISH at LMC (30 of these are exempt); 7% have completed and passed ENGLISH 9 ONLY; and 1% have completed and passed ENGLISH 7 ONLY.

Figure 1. Sample Distribution According to English Level Preparation (n=1,871)



Data Analysis: All student information was collected from the college's master research files as of the end of term (RS80 files). Only data for all selected variables were drawn from the RS80 files. The Statistical Package for the Social Science (SPSS) was used to conduct the statistical analysis. Chi-Square was the primary statistical test employed.

Results

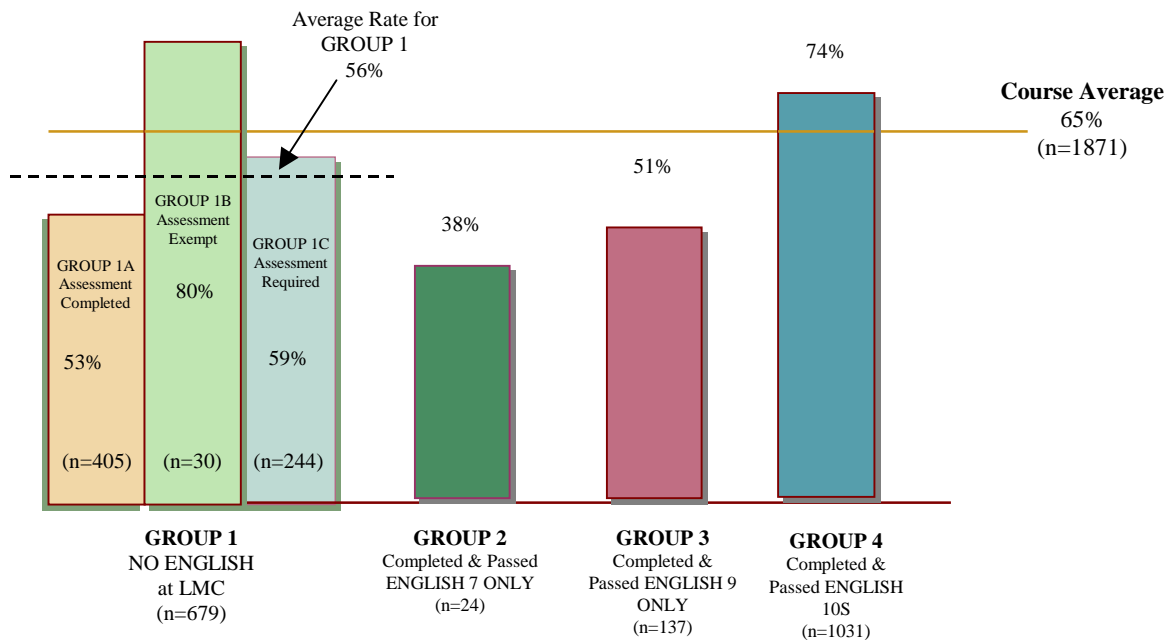
Significant differences in course success and retention rates in HUMST 2LS were found between students WITH and WITHOUT ENGLISH 10S.

Course Success: Chi Square analysis revealed significant differences in course success when controlling for English preparation (Chi = 77.92, df = 3, sig.= .00001). The success rate of students with ENGLISH 10S prior to enrolling in Humanistic Studies 2LS is significantly greater than the success rate of students without ENGLISH 10S, except for the rate of those students who have been exempted from assessment -- Figure 2 -- (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 HUMST 2LS for all students in the sample (overall course success rate) is 65%. The success rate in HUMST 2LS for students with ENGLISH 10S increases to 74% -- a 9-point increase. The success rate for students with ENGLISH 9 ONLY decreases to 51% -- 14 points below the class average and 23 points below the rate of students with ENGLISH 10S. The course success rate for students with BASIC ENGLISH ONLY (English 7) is a low 38%.

As for students with NO ENGLISH AT LMC, differences exist within these students. Students who have been assessed but still need to enroll in an English class (Group 1A) and students who still need to go through the assessment process (Group 1C) have significant lower success rates in HUMST 2LS than students who have been exempt (Group 1B --Chi = 9.49, df = 2, sig. = .008). Students who are exempt from assessment have higher course success rates than the course average (80% vs. 65%), and slightly higher than those who have successfully completed English 10S (80% vs. 74%) -- Figure 2.

**Figure 2. Course Success Rate in Humanistic Studies 2LS by English Level Preparation:
Fall 1993 to Fall 1996 Student Cohorts Combined (n=1871)**



Reliability of Findings (Course Success by Semester Cohort): Course success rate differences were consistently found between students WITH and WITHOUT ENGLISH 10S even when the data was examined by semester cohorts (Table 1). Results for each of the student cohorts for the most part showed that students who have successfully completed ENGLISH 10S prior to enrolling in Humanistics 2LS have higher course success rates than:

- 1) the course average (Figure 3),
- 2) students who have completed ENGLISH 7 or 9 ONLY,
- 3) students who require assessment, and
- 4) students who have gone through the assessment process but have not completed an English class at LMC (Table 1).

It is important to note that when the sample of 1,871 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 7 ONLY, ranges from 1 to 6 students, and the samples of assessment exempt students also range from 1 to 8 students (Table 1).

Figure 3. Course Success Rates in HUMST 2LS of Students with Prior Successful Completion of English 10S: Fall 1993 to Fall 1996 Student Cohorts

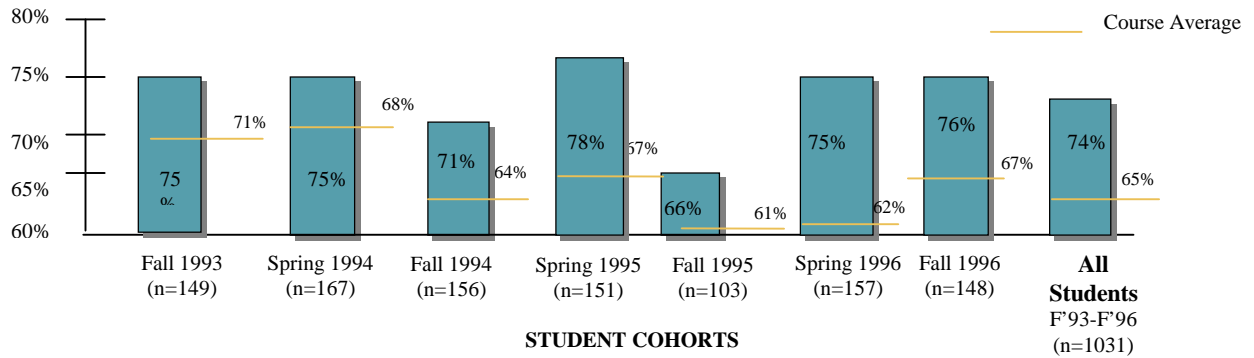


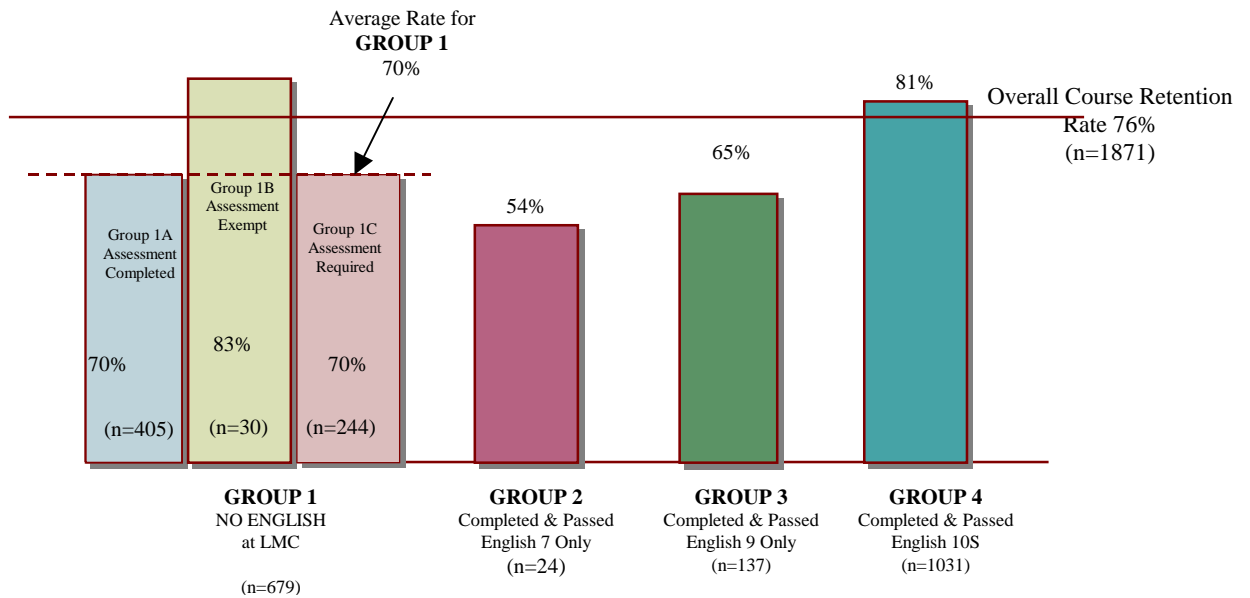
Table 1. Success Rate of Students in Humanistic Studies 2LS: Group of English Level Preparation by Semester Cohort

GROUP	F'93		S'94		F'94		S'95		F'95		S'96		F'96		ALL STUDENTS F'93-F'96	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ENGLISH 10S	149	75%	167	75%	156	71%	151	78%	103	66%	157	75%	148	76%	1031	74%
ENGLISH 9	14	29%	25	72%	19	47%	17	59%	12	42%	22	59%	28	39%	137	51%
ENGLISH 7	4	25%	3	67%	1	0%	3	33%	6	67%	4	25%	3	0%	24	38%
NO ENGLISH:																
Completed Assessment	24	71%	43	47%	56	48%	43	49%	39	51%	49	47%	42	62%	296	52%
Assessment Exempt	8	75%	5	100%	4	100%	4	75%	6	67%	2	50%	1	100%	30	80%
Assessment Required	39	74%	52	56%	45	64%	62	53%	48	60%	53	42%	54	63%	353	58%
OVERALL CLASS RATE	238	71%	295	68%	281	64%	280	66%	214	61%	287	62%	276	67%	1871	65%

Course Retention: As expected, when controlling for student's level of English preparation, significant differences were also found in course retention rates for HUMST 2LS (Chi = 42.42, df = 3, sig. = .00001). Students

who successfully completed ENGLISH 10S and those who are exempt from assessment prior to enrolling in Humanistic Studies 2LS have higher retention rates than students without ENGLISH 10S (Figure 4). The average course retention rate for the class is 76%. The course retention rate for students with ENGLISH 10S increases to 81% -- five points higher than the average; the retention rate for students with ENGLISH 9 ONLY decreases to 65% -- 9 points lower than the course average and 16 points lower than the rate of students with ENGLISH 10S; and the rate for students with ENGLISH 7 ONLY is 54% -- 22 points lower than the course average and 27 points lower than students with ENGLISH 10S. The average rate for students with NO ENGLISH at LMC is 70% -- still 6 points lower than the class average. Within this group however, students who were exempt from assessment are retained at similar rates as students who have successfully completed ENGLISH 10S.

**Figure 4. Course Retention in Humanistic Studies 2LS by English Level Preparation:
Fall 1993 to Spring 1996 Student Cohorts Combined (n=1,871)**



Reliability of Findings (Course Retention by Semester Cohort): Results for each of the student cohorts showed that students who have successfully completed ENGLISH 10S prior to enrolling in HUMST 2LS have for the most part higher retention rates than:

- 1) the course average (Figure 5),
- 2) students who have only completed English 7 or 9,
- 3) students who have completed assessment but have not taken an English Course, and
- 4) students who require assessment (Table 2).

Figure 5. Course Retention Rates in HUMST 2LS of Students with Prior Successful Completion of English 10S: Fall 1993 to Fall 1996 Student Cohorts

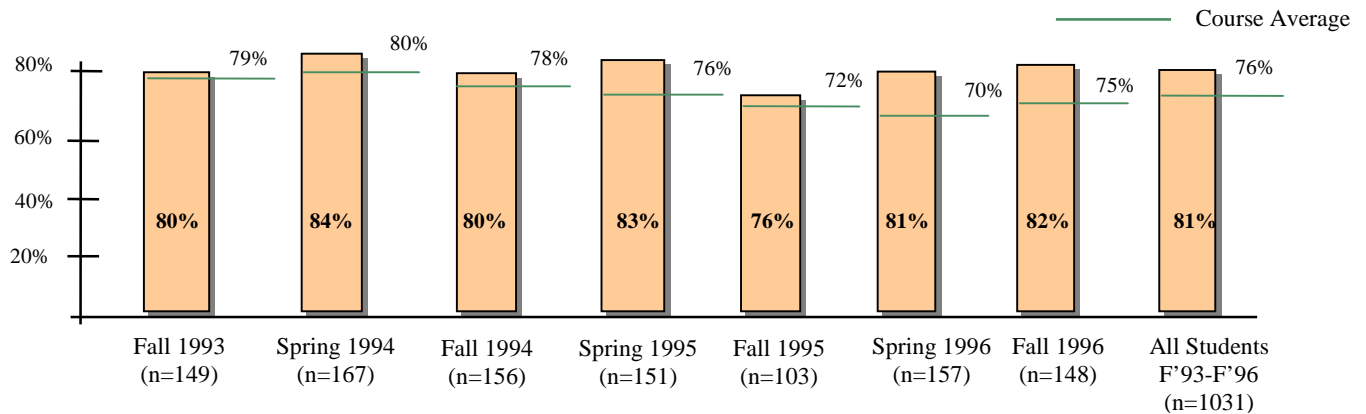


Table 2. Course Retention Rate of Students in Humanistic Studies 2LS: Group of English Level Preparation by Semester Cohort

GROUP	F'93		S'94		F'94		S'95		F'95		S'96		F'96		ALL STUDENTS F'93-F'96	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ENGLISH 10S	149	80%	167	84%	156	80%	151	83%	103	76%	157	81%	148	82%	1031	81%
ENGLISH 9	14	64%	25	84%	19	58%	17	65%	12	67%	22	73%	28	46%	137	65%
ENGLISH 7	4	75%	3	67%	1	0%	3	33%	6	67%	4	75%	3	0%	24	54%
NO ENGLISH:																
Completed Assessment	24	75%	43	70%	56	75%	43	65%	39	69%	49	57%	42	79%	296	70%
Assessment Exempt	8	88%	5	100%	4	100%	4	75%	6	67%	2	50%	1	100%	30	83%
Assessment Required	39	80%	52	71%	45	82%	62	71%	48	67%	53	51%	54	70%	353	70%
OVERALL CLASS RATE	238	79%	295	80%	281	78%	280	76%	214	72%	287	70%	276	75%	1871	76%

Discussion

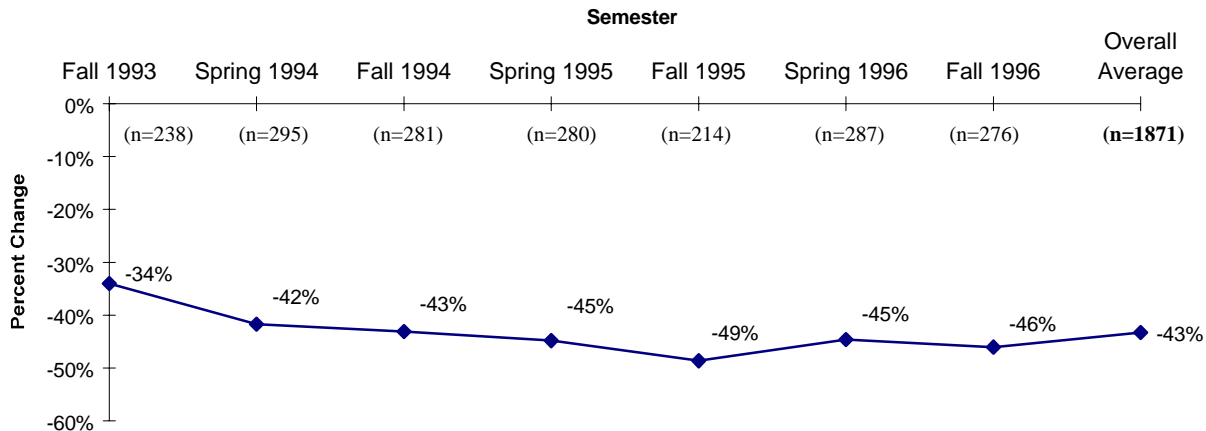
The purpose of this study was to explore the potential student benefit of requiring college level English (ENGLISH 10S) for enrolling in Humanistic Studies 2LS. As the results indicate, students with college level writing (ENGLISH 10S) and those students who have been exempt from going through the assessment process have higher course *success* and *retention* rates than students without ENGLISH 10S. The greatest benefit to students by imposing ENGLISH 10S as a prerequisite to HUMST 2LS would be course *success*. An estimated 8.5% increase in course success rate would be expected. Course *retention* rate would increase by 5.5%.

Another implications that would occur by imposing English 10S as a prerequisite to HUMST 2LS would be an estimated decrease in student enrollment in HUMST 2LS of 43% (Figure 6). This decrease would be the result of excluding the following students from enrolling in Humanistic Studies 2LS:

- 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 7,
- 4) Students who only completed and passed ENGLISH 9.

It is important to note that the students mostly affected would be those who are assessed but chose not to enroll in an English course, and those students who chose not to go through the assessment process. These two groups make up 34.6% of all students who enroll in HUMST 2LS. Only 1% of students with successful completion of ENGLISH 7 ONLY and 7% of students with successful completion of ENGLISH 9 ONLY enrolled in Humanistic Studies 2LS (Figure 1, page 2).

Figure 6. Student Enrollment Drop by Instituting ENGLISH 10S as a Prerequisite to HUMST 2LS



Conclusion:

Requiring ENGLISH 10S prior to Enrolling in HUMST 2LS would benefit students in their success of the course.

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.