English Enrollment and Student Success in College-level General Education Courses; ENG-80 as a Tipping Point

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Introduction

This study looks at the relationship between English course success and success in "general education" 200-level courses. Specifically, the study addresses the issue of whether or not successfully passing ENG-80 is related to success in general education transfer-level courses.

The Sample

For this project, Fall 2009 enrollments in 200-level courses were analyzed. The sample consisted of 2.293 course enrollments generated by 1,482 students. Course enrollments were categorized into three general categories: Social Sciences, Natural Sciences and Humanities. Table 1 illustrates the taxonomy used in this study and the distribution of course enrollments.

Program	Natural Science	Social Science	Humanities	Total Enrollments
Anthropology	0	142	0	142
Astronomy	49	0	0	49
Biology	266	0	0	266
Chemistry	74	0	0	74
Earth Sciences	57	0	0	57
Economics	0	52	0	52
Geology	35	0	0	35
Geography	9	0	0	9
History	0	283	0	283
Humanities	0	0	29	29
Natural resources	31	0	0	31
Philosophy	0	0	126	126
Physics	18	0	0	18
Political Science	0	163	0	163
Psychology	0	572	0	572
Sociology	0	155	0	155
Speech	0	0	232	232
Total	539	1367	387	2293

Table 1: Taxonomy of programs and categories including distribution of course enrollments.

The 1,482 students included in the study are fairly representative of the typical Mendocino College student population with the exception of enrollment status. 53.6% of the student enrolled were enrolled full-time (12 or more units) in Fall 2009, which is roughly twice the proportion of the student population. Demographically, however, the sample is consistent with the student population, as shown in Table 2 which summarizes demographic characteristics.

Characteristic	Category	Percent of Students
Gender	Female	63.6%
	Male	36.4%
District Residence	In-district	87.1%
	Not in-district	12.9%
IPEDs ethnicity	American Indian/Alaskan Native	4.2%
	Asian	2.4%
	Black. Non-Hispanic	2.2%
	Hispanic	18.4%
	White, Non-Hispanic	50.6%
	Native Hawaiian/Pacific Isl.	1.3%
	Two or more races	0.9%
	Non-resident Alien	0.1%
	Unknown/Not reported	19.9%
Enrollment Status	First-time student	6.7%
	First-time Transfer	4.1%
	Returning student	22.9%
	Continuing student	62.4%
	K-12	3.8%
Table 2: Summary of sample characteristics		

After selection, the sample was followed backward through nine enrollment periods (regular semesters plus Summer sessions) to determine their history of enrollment in English courses. This tracking indicated that students fell into one of four categories: no English courses within the 9 enrollment periods; students who successfully completed only Basic Skills English courses (ENG10 or ENG12); students who had completed ENG 80; and, students who had successfully completed a 200-level English class. Table 3 provides the breakdown of the sample by English course experience.

English Course Group	Students	Enrollments
No English course	843	1239
Basic Skills only	50	70
English 80 only	137	200
Transfer-level English	452	784
Table 3: Breakdown of sample students and course enrollments by level of English course completed		

Two different studies were completed based upon this sample. The first study included all course enrollments with those students who were found to have no English enrollments included. The second study repeated the same tests but excluded those students for whom no English enrollment could be found within nine enrollment periods. The second set of tests is more reliable and reported in this study. It was found that 76.3% of the "No English" students were classified as either Continuing or Returning in Fall 2009. On average they had accumulated 26 units (although the maximum accumulated was 210), and were generally older than the other students in the sample. One can presume that these students are more experienced, long-term Mendocino College students who most likely have successfully taken English prior to the nine prior enrollment periods.

Retention and Success

At a fundamental level, measures of retention and success provide a gross snapshot of student behavior. Retention refers to the percent of students who complete the courses and Success refers to the percentage that complete the course with a grade sufficient to take the next course in sequence. As shown in Table 4, students who successfully completed ENG 80 or higher prior to taking the GE course had higher rates of retention and success than there counterparts who had only completed a Basic Skills level English course.

Retention		
Course Group	Basic Skills Only	ENG 80 or higher
Natural Science	85.7%	86.4%
Social Science	72.5%	86.5%
Humanities	75%	90.6%
All Courses	75.7%	87.2%
Success		
Natural Science	50.0%	72.4%
Social Science	42.5%	72.8%
Humanities	37.5%	80.1%
All Courses	42.8%	74.0%

Table 4: Retention and Success rates compared for students enrolled in English Basic Skills, only and students in ENG-80 or higher. Fall 2009 sample.

Overall, students who successfully competed ENG-80 or higher had higher course retention rates They also had considerably higher course success rates than their peers who had not successfully completed ENG-80 or higher. In each category of GE courses, the students who completed ENG-80 or higher enjoyed success rates almost 50% higher than their peers. This is further examined in looking at grades.

Grades

While success and retention provide a gross snapshot, the analysis for student grades can give us a more precise analysis of the impact of English courses on student performance in GE courses.

To conduct this analysis, all grades earned in the Fall 2009 GE courses were converted to their numeric equivalent using the scale: A=4; B= 3; C=2; D+1: F=0.. Enrollments that were not completed (student withdrew or assigned an incomplete) were eliminated from this analysis. The t-test of means (independent samples) was used to compare the differences between groups that completed ENG-80 and those which had not.

In all cases, the mean grades earned by students who completed ENG-80 or higher were significantly greater that the mean grades earned by students which had not completed ENG-80. Table 5 summarizes the result of the t-tests on student grade.

All courses	Mean grade	t value	Significance
Students in ENG-80 or higher (n =851)	2.7955	5.259	$p < .000$
Students not in ENG-80 (n =51)	1.8627		
Natural Sciences			
Students in ENG-80 or higher (n=227)	2.7841	2.544	$p < .026$
Students not in ENG-80 (n=12)	1.667		
Social Sciences			
Students in ENG-80 or higher (n=478)	2.7573	3.449	$p < .002$
Students not in ENG-80 (n=27)	1.9630		
Humanities			
Students in ENG-80 or higher (n=146)	2.9384	2.942	$p < .004$
Students not in ENG-80 (n=12)	1.833		

Table 5: Summary report of t-test of means (independent samples) of student grades for enrollments based upon prior successful enrollment in ENG-80 (n value = number of enrollments)

In all cases, the difference between the two groups' mean grades was found to be statistically significant. Generally, students who successfully completed ENG-80 or higher within the prior nine grading periods earned a grade roughly one full grade higher than their counterparts. The area where the difference between the two groups performance was least was in Social Sciences courses, where the gap separating the means of the two groups was 0.7943. The category of courses with the largest difference between the means was Natural Sciences where the difference between the means was 1.12.

Overall, it can be said that having successfully completed English 80 does appear to be a tipping point in terms of student success. Clearly, when the difference between the average grades between groups of students is consistently about one full grade, ENG-80 and higher level courses are providing critical skills for students.

Given that ENG-80 is not at college-level, further analysis was performed to see if going beyond ENG-80 made a difference in student performance in GE courses. Analysis of variance (ANOVA) was used to compare the performance of the three groups of students who had taken an English class: students who had completed ENG-10 or ENG-12 (group 1); students who had successfully completed ENG-80 (group 2); and students who had successfully completed a college-level English class (group 3). As shown in Table 6, the ANOVA indicates that the level of prior English course completion has a significant impact on student success in GE courses.

Group	N	Mean
Group 1	51	1.8627
Group 2	170	2.3588
Group 3	681	2.9046
Sum of Squares Between groups: 82.381		
Sum of Squares Within groups: 1321.947		
$F = 28.012$ $p < .000$		
Table 6: Summary of ANOVA of groups and GE grades		

As one might expect, the higher the level of English course completed, the higher the mean grade in GE courses. Students who successfully completed ENG-80 had an average grade of 2.3588, roughly a C to C+ and about .50 points higher than students who completed ENG-10 or ENG-12. However, students who went on to complete ENG-200 or higher performed significantly better in their GE courses. The average grade for this group was 2.9046, virtually a "B" grade.

Post hoc analysis of ANOVA results was conducted using Tukey's Honestly Significant Difference (HSD). The Tukey HSD test calculates the difference between two groups that indicates the observed difference is "honestly significant" from a statistical point of view. As shown in Table 7, the difference between all groups was found to be statistically significant. From that, we can conclude that the higher level of English course a student completes is at least one factor in their grade in GE courses.

Pair	Observed difference in means	Significance
Group 1 – Group 2	0.4961	$P < .05$
Group1 – Group 3	1.04181	$P < .05$
Group2 – Group 3	0.54573	$P < .05$
Table 7: Summary of results of Tukey HSD analysis		

The ANOVA was replicated for each category of GE courses – Natural Sciences, Social Sciences and Humanities. In each case, the ANOVA indicated that there was a statistically significant difference among the groups based upon the level of English course previously taken successfully. However, the post hoc analysis, once again using Tukey's HSD indicated an interesting pattern. While there were measureable differences in the mean grades between the groups, in all three of the subsets, the difference between group 1 (ENG-10 or ENG-12) and

group 2 (ENG-80) were not statistically significant. However, the difference in mean grades between the pairs Group1- Group3 and Group2- Group3 were statistically significant in all three subgroups. This reinforces the finding that while ENG-80 makes a difference, the real difference comes when a student has previously completed ENG-200 or higher. Table 8 summarizes the mean grades of enrollments by category of GE courses and level of English completed.

	Natural Science	Social Science	Humanities
Group 1 (ENG-10 or ENG-12)	1.667	1.9630	1.8333
Group 2 (ENG-80)	2.2308	2.4158	2.3330
Group 3 (ENG-200 or higher)	2.8989	2.8488	2.7281

Table 8: Summary of mean grades based upon GE course category and level of English previously completed.

Summary

Using an available sample of course enrollments from Fall 2009, this study examined the question of whether or not successfully completing ENG-80 prior to taking a general education (GE) course, had an impact on a student's grade in the GE course. Using a variety of analysis, the study indicates that students who complete ENG-80, or higher, prior to taking a GE course perform significantly better, in terms of mean grade, than students who completed only ENG-10 or ENG-12. Further analysis indicated that the real difference was seen in those students who completed ENG-200 or higher prior to taking their GE course. When the mean grades in GE courses, in any of the three categories, of these students is compared to the mean grades of other groups, that difference was found to be statistically significant.

While the finding is interesting, it may be indicative of other factors which may be affecting student performance in their GE courses. Some of these factors may include:

- Initial placement in English sequence
- Number of GE courses taken
- Time between completing the English course and completing the GE course