COURSE VALIDATION STUDY

Target Course: SOC 110
Prerequisite: ENGL 099 & MATH 070

The following is statistical data on the validation of the following course prerequisite:
Successful completion of ENGL 099 and MATH 070 as a prerequisite for OT 205.

SOC 110 SUCCESS * Completed Prerequisites Crosstabulation

Count

		Completed Prerequisites		Total
		0	1	Total
SUCCESS	0	163	1	164
	1	329	4	333
Total		492	5	497

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.386(b)	1	.534		
Continuity Correction(a)	.021	1	.886		
Likelihood Ratio	.421	1	.516		
Fisher's Exact Test				1.000	.467
Linear-by-Linear Association	.385	1	.535		
N of Valid Cases	497				

a Computed only for a 2x2 table
b 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.65.

Chi-Square Measurement:

The *Chi-Square* measurement tests the hypothesis (*null hypothesis*) that there is *"no difference"* between the two groups. In order to reject this hypothesis and conclude that there is a statistically significant difference between the two groups Chi-Square must be greater than **3.84**. To ensure the validity of the Chi-Square test there is a minimum frequency threshold for a 2x2 table that should be obeyed. If any of the observed frequencies in the cross-tabulation table are **5 or below** than the validity of the Chi-Square measurement is questionable.

CHI-SQUARE = .386   FAIL TO REJECT NULL HYPOTHESIS

Fisher's Exact Measurement:

The *Fisher's Exact* measurement can be used as an alternative to the Chi-Square measurement where a large sample is difficult to obtain. In order to reject the null hypothesis and conclude that there is a statistically significant difference between the two groups Fisher's Exact must have a P-value **less than** the standard **.05**.

FISHER'S EXACT = 1.000   FAIL TO REJECT NULL HYPOTHESIS

Ratio:
The ratio to be measured is the ratio of **right response:wrong response**.
A *right response* would be nonsuccess in the prerequisite course combined with nonsuccess in the target course or success in the prerequisite course combined with success in the target course. A *wrong response* would be nonsuccess in the prerequisite course combined with success in the target course or success in the prerequisite course combined with nonsuccess in the target course. For the *study ratio* to meet the *ratio criteria* it must be greater than or equal to **2:1**.

RATIO: 163+4:329+1 = **167:330**   FAILED CRITERIA

Percent increase:
Percent increase is measured by subtracting the percent success before adjusting for the prerequisite from the percent success after adjusting for the prerequisite. For the *study percent increase* to meet the *percent increase criteria* there must be a difference greater than or equal to **10%** in the positive direction.

PERCENT INCREASE: PASSED CRITERIA
333/497 = 67% Before Prerequisite
4/5 = 80% After Prerequisite

<u>Summary</u>
A total sample of 100, with at least 20 students in the non-successful group for the target course is recommended. In this case the total sample is sufficient (497) and the number in the non-successful group is above the recommended level (164). Both the chi-square test and the Fishers Exact test fail to reject the null hypothesis that success in ENGL 099 and MATH 070 is independent of success in SOC 110, showing that there is no statistical evidence that ENGL 099 and MATH 070 are necessary for success in SOC 110. ENGL 099 and MATH 070 also fail the Ratio criteria but pass the Percent Increase criteria. At this time there is no statistical evidence that ENGL 099 and MATH 070 are suitable as prerequisites for SOC 110. A new analysis with additional data is recommended at a later date to increase the sample size.