

# COURSE VALIDATION STUDY

Target Course: CFE 104 Literature for Children  
Prerequisite: ENGL 101

The following is statistical data on the validation of the following course prerequisite:  
Successful completion of ENGL 101 as a prerequisite for CFE 104.

## CFE104 Success Recode \* ENGL101 Success Recode Crosstabulation

Count

		ENGL101 Success		Total
		NO	YES	
CFE104 Success	NO	20	4	24
	YES	37	11	48
Total		57	15	72

### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.379(b)	1	.538		
Continuity Correction(a)	.095	1	.758		
Likelihood Ratio	.390	1	.532		
Fisher's Exact Test				.759	.387
Linear-by-Linear Association	.374	1	.541		
N of Valid Cases	72				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.00.

### 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 = .376      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 = .759      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:  $20+11:37+4 = 31:41$       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:      FAILED CRITERIA

$48/72 = 67\%$  Before Prerequisite

$11/15 = 73\%$  After Prerequisite

**Summary**

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 insufficient (72), but the number in the non-successful group is above the recommended level (24). Both the chi-square test and the Fishers Exact test fail to reject the null hypothesis that success in ENGL 101 is independent of success in CFE 104, showing that there is no statistical evidence that ENGL 101 is necessary for success in CFE 104. ENGL 101 also fails both the Ratio and Percent Increase criteria. At this time there is no statistical evidence that ENGL 101 is suitable as a prerequisite for CFE 104. A new analysis with additional data is recommended at a later date to increase the sample size.