



ANTELOPE VALLEY COLLEGE

Notes from the Researchers

- Volume 1 – June 2009

Recent Projects from the Office of Institutional Research and Planning

Research for: Enrollment Management Committee

Research Lead: Aeron Zentner

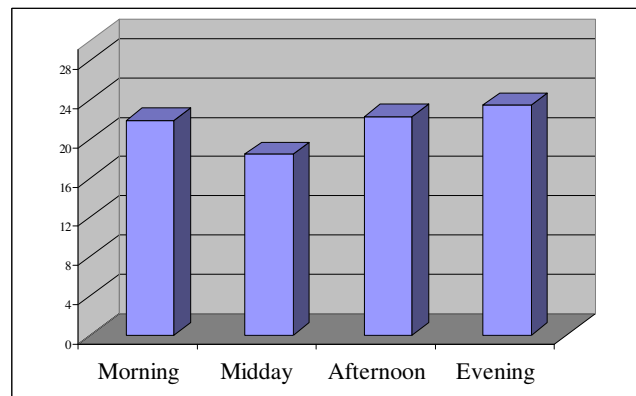
Enrollment at AVC has been growing rapidly over the past several years, most recently including a 9.7% increase from fall 2007 to fall 2008. In response to the rapid growth the Office of Institutional Research and Planning (OIRP) conducted a four month study following spring 2009 daily fill rates of courses for the Enrollment Management Committee. Course enrollment was tracked daily and the date was noted for when courses hit 100% of maximum enrollment. This data was then used to calculate the speed at which courses fill up by time of day, day of week, and division to assist the college in maximizing availability of seats for the fall 2009 term where additional growth is expected to run into budget constraints.

Day of Week	Avg. Days to Course Closure
Monday	17
Tuesday	22
Wednesday	20
Thursday	20
Friday	20
Saturday	24

In the tables presented, low averages represent high demand (courses on average take less time to fill) and larger averages represent lower demand (courses on average take more time to fill). After analyzing the data and determining the classes in high demand, it was found that classes offered on Monday filled to 100%, the fastest on average, with Wednesday, Thursday, and Friday taking an average five days longer.

Below are the results identifying popular times of the day for class selection. From this data we see courses starting midday (9:30 a.m. to 12:59 p.m.) had the shortest average time to fill to 100%, followed by morning (6:00 a.m. to 9:29 a.m.) and afternoon (1:00 p.m. to 4:29 p.m.) which on average took four days longer to reach 100% capacity. Evening classes (4:30 p.m. to 7:59 p.m.) took an average one day longer to reach 100% capacity.

Time of Day		Avg. Days to Course Closure
6:00a-9:29a	Morning	22
9:30a-12.59p	Midday	18
1:00p-4:29p	Afternoon	22
4:30p-7:59p	Evening	23



For additional information on this or other projects, contact the research office at ext. 6398.



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Recent Projects from the Office of Institutional Research and Planning

Research for: Academic Policy and Procedure Committee

Research Lead: Aaron Voelcker

Every major term (spring and fall) the Office of Institutional Research and Planning receives requests from the Academic Policy and Procedure Committee (AP&P) to complete a course validation study for a select few courses. These studies are designed to see if the students who were required to have successfully completed the prerequisite course would be more likely to successfully complete the target course. In order for AP&P to implement a prerequisite for a target course this study must be completed and evidence must be shown to support the idea that the difference in success between the groups of students who did and did not meet the proposed prerequisite was statistically significant. A total sample of 100, with at least 20 students in the non-successful group for the target course is recommended.

There are four major criteria that are looked at when completing a course validation study. Three out of these four criteria must be met. They are:

Chi-Square Test - The *Chi-Square Test* tests the hypothesis (*null hypothesis*) that there is “*no dependency*” between the two variables (success in the proposed prerequisite and success in the target course). In order to reject this hypothesis and conclude that there is a statistically significant dependency between the two variables the 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 then the validity of the Chi-Square measurement is questionable.

Fisher’s Exact Test - The *Fisher’s Exact Test* 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 dependency between the two variables the Fisher’s Exact must have a P-value of *less than* the standard .05.

Ratio Criteria - 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. The *ratio criteria* must be greater than or equal to 2:1.

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



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Course Validation Example:

		Completion of Proposed Prerequisite		Total
		No	Yes	0
Success in Target Course	No	841	70	911
	Yes	1,363	257	1,620
Total		2,204	327	2,531

Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	34.682	1	.000		
Continuity Correction(a)	33.959	1	.000		
Likelihood Ratio	37.221	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	34.669	1	.000		
N of Valid Cases	2,531				

Chi-Square Measurement = 34.682

Fisher's Exact Measurement = .000

Ratio Criteria = 1098: 1433

Percent Increase Criteria:

1620/2531 = **64.0%** Before Prerequisite

257/327 = **78.6%** After Prerequisite

Reject Null Hypothesis

Reject Null Hypothesis

Failed Criteria

Passed Criteria

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 sufficient (2,531). Additionally, the number in the non-successful group is above the recommended level (911). Both the Chi-Square Test and the Fisher's Exact Test reject the null hypothesis that success in the target course is independent of success in the proposed prerequisite, showing that there is statistical evidence that the proposed prerequisite is necessary for success in the target course. The proposed prerequisite also passed the Percent Increase criteria but did not pass the Ratio criteria; this could be because an overwhelming number of students do not take the proposed prerequisite as an advisory. At this time there is enough statistical evidence that the proposed prerequisite would be suitable as a prerequisite for the target course.