To Commute or Not to Commute: Achievement in College Algebra

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Introduction

A student's academic achievement in college is influenced by many factors including the proximity in which they live to a campus. There are a variety of living situations and environments in which a student can live. Of these are residence halls, on campus apartments, fraternity or sorority houses, off campus apartments, living at home with his or her parents, living with a spouse and with or without children. For the purposes of this study resident halls are classified as buildings that are same sex or coeducational that are owned and managed by the university in which undergraduate and single students live. On campus apartments are classified with a similar definition in which single students of the same sex live in the same apartment. In all on campus living arrangements, at least one resident assistant is present in each building and or floor depending on the size of the building. Off campus apartments include same sex students living together as well as non-married couples. These apartments can be within walking distance of campus or driving distance. They are not overseen by the university. Older students are more probable to be married with a spouse and may or may not have children as well. They typically live in driving distance away from campus.

This study was conducted on a small private liberal arts catholic university in South Texas. Data was collected over 4 semesters for two years in college algebra classes. Algebra classes were selected due to the course being a requirement class for all undergraduate students as well as the many factors that can influence a student's success in a college algebra class. The semesters of the university are from August to December and January to May. The classes met twice a week. The classes that were chosen were taught by the same professor who was not considered a professor of lower rank. A variety of factors were evaluated based on a questionnaire the students answered including their major, sex, commuter or resident, and their grade at the end of the semester. Grading in the university is on a letter grade system. Grades were also simply looked at as pass or fail. The fact that algebra is a multi- dimensional

subject that requires factors such as discipline, work ethic, and study skills influence a student's overall success at college.

Statistics

In college, students have a variety of options to choose from when it comes to living conditions. Some are decided from a financial standpoint while others' decisions are based on convenience. The living circumstances include from living at home with parents, on campus, in an apartment, in a fraternity or sorority house, or commuting and raising a family. Not only is the location a student lives a factor in achievement, but other curricular activities as well. Students can have full time jobs, be raising children, and playing sports. Students tend to be involved in many more activities than just academics and academics are not always the priority.

The primary core mathematics course that students take in college is algebra. Schools also offer other alternatives including geometry. Students have acquired all different backgrounds of mathematics education prior to taking a college algebra course. This factor as well as a student's living conditions contributes to academic achievement. How well a student achieves in mathematics can be greatly determined by the attitude the student and the teacher has towards the course. Stereotypes are also typically found in a mathematics classroom. Males are thought of as achieving better in mathematics.

The study conducted evaluated the relationship between a student's academic achievement and whether the student lived on or off campus. The grading scale used to determine academic achievement is on a scale from zero to one hundred with a one hundred representing maximum academic achievement, data was collected in four semesters from spring 2007 through fall 2008. One hundred and four student's information, both male and female, was gathered in college algebra classes at a conservative private liberal arts school in South Texas. Other factors that were taken into consideration include a student's major, class rank, and whether they were an athlete or not. The statistical tests run on the data show the resident factor being the only one with a significant impact on student's academic achievement. The other factor do impact academic achievement but not significantly. The null hypothesis which was based

off prior research determined to be that the average grade of students living off campus would be equivalent to the average of students living on campus. So whether a student lived on or off campus would not impact his or her academic achievement.

Of the 104 students surveyed, thirty three of the students lived on campus, which is thirty two percent of the total, and seventy one students lived off campus, which is sixty eight percent. Almost twice as many students lived off campus in comparison to those that lived on campus.

Final Grade	Descriptive							
	N	Mean	Std . Deviation	Std . Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
On Campus	33	82.30	16.341	2.845	76.51	88.10	40	100
Off campus	71	81.94	12.950	1.537	78.88	85.01	33	100
Total	104	82.06	14.035	1.376	79.33	84.79	33	100

There are various reasons to explain this including the campus of the school is very small with limited living accommodations on campus. Also many students have extracurricular activities off campus in the large city consisting of jobs and families. Many of the students are from the surrounding area as well.

Figure 1

The mean GPA of students living on campus is 82.3. The mean GPA of students living off campus is 81.94 . The GPA of both students living on and campus is relatively similar. The average GPA for all the 104 students was 82.06 .

Final Grade	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig
Between Groups	2.910	1	2.910	.015	.904
Within Groups	20284.744	102	198.870		
Total	20287.654	103			

Figure 2

The Anova one way statistical test was selected to be run on the data. The reason for this is the main focus of the study was evaluating the relationship between students that commute and their academic achievement in college Algebra. These results support the hypothesis that neither students living on or off campus had significantly more academic achievement. This is shown in the statistical test run with the result of a .904 significant factor.

Conclusion

The hypothesis and statistical results of the study conducted on college algebra classes correlate with the results determined from prior studies. There are many factors that contribute to the academic achievement of a student. Living on or off campus has many pros and cons for an individual. Just as individuals have different learning styles they also have different living environments that serve them best to obtain the highest academic achievement for them. Although it is evident that living on or off campus can impact a student's achievement, it is not made clear in this study or prior studies if one is particularly more beneficial to someone. To improve upon this study a larger sample should be taken and other factors more carefully evaluated. For the intentions of this study, mainly lining accommodations and academic achievement in college algebra were only focused on. Alternative and similar studies could also be conducted on other subjects in college.

References

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