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Academic Counselors and Their Relationship to Graduation Rates in LAUSD Public High Schools

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Abstract

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Background and Significance

A person's future earnings and life outcomes are influenced by a person's education. A high school education is a strong indicator of one's post-secondary education, future health, incarceration, and life expectancy. A high school graduate can achieve brighter future by attaining an education (Allensworth, Healey, Gwynne, and Crespino 2016). Various individual factors are related to educational achievement. For example, students who are determined, persistent, and disciplined, are more likely to graduate from high school (Behr, Marston, and Nelson, 2014). In addition to individual factors, structural factors also determine educational outcomes. For example, schools' ideologies about which students are worthy of resources in ways that make some students more likely to graduate than others (Zirkel and Pollack, 2016).

Research has examined the role of school services in shaping educational outcomes. Much research has examined the role of teachers (Stronge 2010). Non-teaching services have received less attention. Pupil services are resources separate from teaching that provide students the support they need to develop academically. Pupil services staff encompass nurses, academic counselors, psychologists, speech specialists, and social workers. These resources provide support against obstacles that make education difficult to attain and/or complete. For example, some studies have focused on psychological services provided by schools, indicating that they are generally lacking, but when available, they can greatly impact on student's academic success. Because of the lack of psychological services, academic counselors feel pressure to go above and beyond their academic guidance in the event they notice a student requires psychological support (Sciarra and Whitson 2007). The present study the counselor-to-student ratio.

Previous research on pupil services has not always differentiated between types of services (e.g., counselors versus nurses) or examined differences between subtypes of services (e.g., among counseling services there could be an academic counselor, a guidance counselor, or a psychological counselor (Stone-Johnson 2015). The current study distinguishes the services each school provides its students at the high school level; it examines the effects of academic counseling services separate from the effects of all pupil services combined.

Some research on academic counseling services has examined research the counselor visit experience or the mere fact that a student has met with his or her academic counselor (Robinson and Roska 2016). Other cases, research focuses on the quality of the relationship between the student and counselor (Holland 2015). Examining the student-counselor visit or relationship quality is important. However, very few studies analyze how a school's quantity of counselors relates to a student's educational outcomes. Focusing on students who do seek counseling or have engaged with their counselors neglects the rest of the students who may not meet with a counselor potentially due to counselors' too-large caseloads.

Research has examined the student perspective on academic counseling and found that students often have negative experiences (Cooper and Liou 2007). Counselor perspectives have been assessed to better understand how counselors feel they are fulfilling their role of providing guidance. This research shows that most counselors find themselves struggling with job stress, role ambiguity, and job overload (Falls and Nitcher 2007). This information shows that counseling is an area that requires improvements. However, improvements would fail to make a difference if the supply of counselors fails to meet the demand. The current study examines the school-level counselor-student ratio as it relates to the percentage of students who graduate from the school.

Most research on academic counseling examines only one school or a handful of schools. The current research examines a single district, Los Angeles Unified School District (LAUSD), and all traditional public high schools within that district. This approach gives a more representative illustration of the amount of counseling being provided and its effect.

Most of the research on the effects of academic counselors shows that counselors have a positive effect on student academic outcomes. For example, counseling positively affects students' college application decisions; students who have had counseling tend to apply to 4-year institutions more than students who have had no interaction with counselors (Robinson and Roska 2016). Other research shows that counseling results in higher test scores, better attendance, higher graduation rates, lower dropout rates, and higher enrollments in Advanced Placement courses (Lapan and Harrington 2010). Interacting with counselors enhances students' motivation to complete school, willingness and interest to take more challenging courses, sense of preparedness for college, and work options after college (Stipanovic, Stringfield, and Witherell 2017). Counselors who address financial inquiries, decision making, and change positively influence students' graduation rates (Lapan, Norman, Bragg, and Pierce 2012).

A few studies found no positive effects of counseling on student outcomes. For example, one study did not find a statistically significant relationship between school counseling and Latina/o students' vocational development (Vela, Flamez, and Clark, 2015). Another study found no positive benefits of school counseling; the authors explained this result as due to the possibility that since students in the sample were already highly motivated to attend college and pursue careers, they may not have needed much academic counseling (Parker, College, Mississippi, and Ray, 2017). However, these few studies did not examine graduation rates, the focus of the current study.

Several factors may explain why the effect of counseling services can be positive in some cases, null in some, and negative in others. Counselor's workload may be one explanation where too much work produces less quality counseling. In one study examining how counselors feel about their role it was discovered that the distribution of non-counseling duties to counselors has deleterious effects. It results in students delaying college, making uninformed post-high school decisions, being less likely to receive financial aid for college, and being more likely to be disappointed in their college choice (Stone-Johnson 2015). Another study examined more than just a counselor's caseload and discovered that counselors struggle with job stress, role ambiguity, role conflict, and job overload, all of which affect the relationship that counselors cultivate with students (Falls and Nitcher 2007). Poor quality counselor-student relationships contribute to distrust (Holland 2015). Counseling quality is very important and is affected by the quantity of cases for which a counselor is responsible. When more counselors are available, students' attendance and graduation rates increase (Lapan, Whitcomb, and Aleman 2012). One study on the showed that the smaller an academic counselor work load is, the better the student's educational future can be (Lapan, Gysbers, Stanley, and Pierce, 2012).

Few of these studies on the effects of academic counseling examined schools' graduation rates. We know little about how many counselors are needed to meet the demands of students to ensure the positive benefits of academic counseling. Thus, more research on the counselor-to-student ratio and its effect on school graduation rates is needed. This study addresses this gap. It will examine not only the counselor-to-student ratio, but also the pupil services staff-student ratio. This research informs the public of the available staffing students can expect to find in a traditional public LAUSD high school and how the student-counselor ratio relates to the percentage of students who graduate from the school.

Previous research has some limitations. For example, some research only examines a counselor's perspective which misrepresents the kind of service students are receiving through a response bias (Mau, Li, and Hoetmer 2016). Other research disregarded the differences in access to resources available for African American and Hispanic students which could have affected the student's educational outcomes and experiences (Vega, Moore, and Miranda 2015). Additionally, a handful of studies did not randomize their experimental units which can render inadequate results (Vela, Flamez, and Clark 2015). Others only examined a few students from a school or one school which did not represent student resources at large (Stipanovic, Stringfield, and Witherell 2017). These research limitations such as the latter misrepresent the extent that students are getting ineffective academic preparation and undermine the educational system's (as opposed to a single school's) mission of providing students with the resources they require to achieve academic success. Therefore, the current study assesses one of California's largest districts and examines how the ratio of staff (counselors and other pupil services staff) to students relates to percentage of students who graduate from the school.

Research Design and Methods

This study was cross-sectional and employs data obtained directly from the California Department of Education (CDE)'s website (<https://www.cde.ca.gov>). The unit of analysis was the schools. The Los Angeles Unified School District has 160 traditional public high schools. The sample included 137 traditional public high schools. Twenty-three of the 160 schools were excluded for having incomplete data.

School-level enrollment, graduation, and staffing data were retrieved via DataQuest, the Department's searchable public use database. Data on school-level English Language Learners (ELLs) percentage and Title 1 eligibility percentage were retrieved from the individual school profiles available online. Data on the school-level per-Pupil Expenditures in dollars were retrieved through the School Accountability Report Cards. Enrollment, graduation percentage, and staffing referred to the 2015-2016 academic year for all but two schools. Data for these two schools referred to the 2014-2015 academic year. The data for the English Language Learners and Title 1 eligibility referred to the 2016-2017 academic year because data were only available for that year.

The measures were quantitative. The key independent variables consisted of the school's counselor-to-student's ratio and the school's pupil-services-staff-to-student ratio. The counselor-to-student's ratio was calculated with the students being the denominator and the counselors being the numerator. The pupil-services-staff-to-student ratio was calculated with the students being the denominator and the pupil services staff being the numerator. Higher values on these two variables indicate a smaller workload – that is, more staff per student.

The dependent variable is the percentage of students in the cohort who graduated from high school in the academic year. The control variables included the number of students enrolled in the school, the percentage of English Language Learner (ELL) students enrolled in the school, the percentage of Title-1-eligible students in the school, the school's Per-Pupil Expenditures in dollars, and the percentage of racial/ethnic minority students enrolled in the school.

Analysis

Analyses were performed in StatPlus, a free statistical analysis software available for download online (analystsoft.com). Descriptive analyses included frequencies and measures of

central dispersion. Bivariate analyses included correlations of all variables. Multivariate analyses included Ordinary Least Squares Regressions.

Preliminary regression analyses included all control variables. However, the results suggested to retain only the percentage of ELL students enrolled, Per-Pupil Expenditures in dollars, and the percent minority of enrolled students as controls that were correlated with graduation rates. Therefore, the other two control variables were not included in subsequent analyses. The first regression (Model 1) tests if the control variables (the percentage of English Language Learners, Per-Pupil Expenditures in dollars, and the percentage of minority students) relate to the cohort graduation percentage. The second model (2a) incorporates the counselor-to-student ratio into Model 1. The alternative second model (2b) incorporates the pupil-services-staff-to-student ratio into Model 1.

It was hypothesized that in each model the control variables (English Language Learners, Per-Pupil Expenditures in dollars, and the percent minority) would be correlated with the graduation percentage as follows: negative, positive, and negative. There were two linear regression analyses. The first regression examined if there was a statistically significant relationship between the counselor-to-student ratio and the cohort graduation rate. This study hypothesized that there would be a statistically significant positive relationship between the counselor-to-student's ratio and graduation percentage (H_1 : counselor-to-student's ratio and percentage of students who graduated are not independent). The second regression examined if there was a statistically significant relationship between the pupil-services-staff-to-student ratio and the cohort graduation rate. This study hypothesized that there would be a statistically significant positive relationship between the pupil-services-staff-to-student ratio and graduation

percentage (H₂: pupil-services-staff-to-student ratio and percentage of students who graduated are not independent).

Results

The mean graduation percentage was 85 (SD=11); on average 85% of the cohort of students graduated. The range of graduation percentage was 29% to 100%. Thirteen schools had zero counselors. Nine schools had zero pupil services staff. For the 124 schools that had some number of counselors, the mean counselor-to-student ratio was 0.003 (SD= 0.002), less than the recommended standard which is 0.004 (American School Counselor Association 2017). The counselor-to-student ratio ranged from a minimum of 0 to a maximum of 0.02. For the 128 schools that had some number of pupil services staff, the mean pupil-services staff-to-student ratio was 0.003 (SD= 0.002). The pupil services staff-to-student ratio ranged from a minimum of 0 to a maximum of 0.02.

Table 1 shows the correlations of the variables in the analysis. The control variables – English Language Learners, Per-Pupil Expenditures in dollars, and the percentage of minority students – were negatively correlated with the graduation percentage, the counselor-to-student ratio, and the pupil-services-staff-to-student ratio. The counselor-to-student ratio and the pupil-services-staff-to-student ratio were positively correlated with each other and negatively correlated with the graduation percentage.

Table 2 shows the regression results. In the second column are the results for Model 1. The results showed that the only control variable that was statistically significantly related to the graduation percentage was the percentage of English Language Learners. The relation was negative. The third column of Table 2 shows the results for Model 2a. The counselor-to-student

ratio had no statistically significant relation to the graduation percentage. The percentage of English Language Learners was, as in Model 1, negatively related to the graduation percentage. The fourth column of Table 2 shows the results for Model 2b. The pupil services staff-to-student ratio had no statistically significant relation to the graduation percentage. The percentage of English Language Learners was, as in Model 1, negatively related to the graduation percentage.

Discussion

This study examined the relation of the counselor-to-student ratio to the percentage of students who graduate in traditional, public high schools in Los Angeles Unified District. It also tested if there was a statically significant relationship between the pupil-services-staff ratio and the graduation percentage. Regression analyses did not provide support for the study's hypotheses; there was not a statistically significant relation of the counselor-to-student ratio or the pupil services staff-to-student ratio to the graduation percentage.

These results may indicate that there is no relation between the ratios and graduation percentages. It may be that counseling quality matters more than quantity. Prior research has indicated that the quality of the counseling experience is related to academic outcomes (Robinson and Roska 2016). However, maybe some counselors with high workload can maintain high quality counseling and some counselors with low workload nonetheless deliver low quality counseling. If so, then the ratio would not capture differences in quality associated with workload.

The finding of no relation may be due to various measurement and modeling issues, rather than to the absence of a relation. Graduation percentage may not be the best dependent variable to measure this relation. Graduation percentage that captures only if a person graduated or not. It does not capture the academic distinctions between people who graduate. Some graduates are at

the lower end of academic performance and may be more similar in terms of academic prowess to students who did not graduate than to other graduates. An alternative way to measure academic outcomes of counseling may be scores on college entrance exams or the graduating high school GPA. These measures would capture a greater variation among students who graduated and thus, might capture better any relation of the counselor-to-student ratio to students' academic outcomes.

Another possible explanation for the result of no relation is that the models did not include other variables known to affect academic outcomes, such as intelligence, other forms of academic enrichment (e.g., tutoring), and family support. If these measures were included in the models, an effect of counselor-to-student ratio may have been revealed.

Study limitations may also explain why this study did not receive the hypothesized results. There was some missing data; schools that were missing a graduation rate were dropped from analysis and this may have affected the measurement of the ratios. Also, this study only examined public high schools, and at that, traditional public schools. School type (continuation schools, private schools, charter schools, etc.) may be related to the counselor workload and effects and/or graduation rates. Additionally, although this study informed us about the relationship between counselor-to-student ratio and graduation in the Los Angeles Unified District, it did not represent the relationship between the latter variables at large since only one district was examined versus examining more districts that could have discovered a statistically significant relationship.

Future Research

Future research examining the relation between counselor-to-student ratios and academic success should examine the quality of counseling alongside the workload. It could do this qualitatively or quantitatively. Interviews may be able to provide an in-depth perspective. This

type of qualitative work along with quantitative analysis, could produce a better representation of what the quality of counselor-student relationship. Additionally, being able to examine a population with no missing data would be more accurate. Due to missing data in some years for some variables for some schools, this study had to use data from other academic years, and this may have introduced error into the statistical models, preventing the identification of a relation between the variables. Another improvement would be to analyze additional districts and types of schools and compare public and private schools. For example, it may be useful to compare LAUSD, a public district, to a private district to see if the effects of counseling differ in those two settings. Lastly, a study that includes in the analytical model other factors such as family income, family support, or family educational background would be helpful to determine whether the effect of counseling-student ratio appears when these variables are controlled.

Tables

• Table 1: Correlation Coefficients						
	Graduation Rate %	Counselor-to-student ratio	Pupil-services-staff-to-student ratio	English Language Learners	Per-Pupil Expenditure	Minority Percentage
Graduation Rate %	1					
Counselor-to-student ratio	r= -0.14	1				
Pupil-services-staff-to-student ratio	r= -0.21*	r= 0.85***	1			
English Language Learners	r= -0.65***	r= 0.27**	r= 0.17*	1		
Per-Pupil Expenditure	r= -0.26**	r= 0.09	r= 0.10	r= 0.26**	1	
Minority Percentage	r= -0.20*	r= 0.05	r= -0.04	r= 0.42***	r= 0.07	1

P-Values: p < .05* p < .01** p < .001***

Table 2: Coefficients for Models Regressing Variables on Graduation Percentage

Controls:	Model 1	Model 2	Model 3
English Language Learners	-0.77***	-0.77***	-0.77***
Per-Pupil Expenditure	-0.00	-0.00	-0.00
Percent Minority	0.11	0.10	0.10
Key Variables:			
Counselor-to-Student Ratio		-51.64	
Pupil-Services-Staff-to-Student Ratio			-28.23
Adjusted R²	0.48	0.48	0.48
N	129	129	129
P-Values: p < .05* p < .01** p < .001***			

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