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**Do Schools Make a Difference:
A Two Year Study of High School
Effects and First Year College
Success**

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An Introduction to ATINER's Conference Paper Series

ATINER started to publish this conference papers series in 2012. It includes only the papers submitted for publication after they were presented at one of the conferences organized by our Institute every year. The papers published in the series have not been refereed and are published as they were submitted by the author. The series serves two purposes. First, we want to disseminate the information as fast as possible. Second, by doing so, the authors can receive comments useful to revise their papers before they are considered for publication in one of ATINER's books, following our standard procedures of a blind review.

Dr. Gregory T. Papanikos
President
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Abstract

School accountability is receiving heightened attention in America as a means of facilitating productive educational outcomes for students. Additionally, college preparation is receiving more emphasis as a necessary outcome for students graduating from high school. Given the expectations related to school accountability and student success in college, this study was conducted to determine what factors from a school level as well as an individual level might be contributing to students' success in their first year of college. Core grade point average, eligibility for the state's merit based scholarship program, and participation in dual enrollment courses were all found to be predictive of first year college success. The study concludes that student productivity may best be facilitated by creating policy that emphasizes educational opportunity based upon robust access to high levels of human and social capital.

Keywords: human and social capital, student retention, school accountability

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Introduction

The costs of higher education are increasing sharply throughout the United States. Not surprisingly, the rising cost of college brings with it increased attention to how well students are being prepared by secondary education for college. One objective of the first phase of this study was the examination of the predictability provided by a school's ranking in Louisiana's accountability model for their students' success in college. Additionally, the study also examined the relationship between the Tuition Opportunity Program for Students (TOPS) and subsequent college retention, along with other variables that are expected to provide some predictive value. The results of the first phase of the research indicated little reason to conclude that a school's accountability ranking was linked to their students' subsequent college success (Smith, Drodny, Guarino, 2011). Additionally, the study also concluded there was no statistical evidence to suggest that students receiving TOPS were more likely to persist in their first year of college when viewed as a function of the school. In other words, students from high performing schools that received TOPS were no more likely to persist than students who received TOPS from low performing schools.

Findings such as these, where the school accountability ranking was of little to no value in predicting their students' college success in the first year, led us to shift our perspective away from focusing on school level effects towards a more specific analysis of the influence of human and social capital on individuals. We define human capital in this context as the skills, talents, and dispositions possessed by the individual that contribute to their achievement of goals. Social capital is defined as the amount of support and network available to an individual that also contributes to their achievement of goals.

Although the emphasis has shifted away from schools and towards individuals, it is still of interest to determine whether a particular iteration of a school such as charter schools or whether school choice via vouchers are demonstrating generalized effects upon human and social capital for their students. In Louisiana, charter schools, vouchers, and heightened state level accountability efforts are all at least partially in place because policy makers are pressuring schools to significantly increase their outcomes. For example, Louisiana has just announced that, beginning in March 2013, all juniors in public high schools will be required to take the ACT test because, "every child deserves a choice between college and career" (The Advocate, 2012).

Factors that contribute to first year success in college have received significant attention in the extant literature (e.g., Cohn, Cohn, Balch, & Bradley, 2004; DeBeard, Spielmans, & Julka, 2004; Tinto, 1993). Although the focus has shifted from school accountability rankings, the variable is still included in the study due to the considerable attention given to it by the state's accountability model. In addition to an analysis of the relationship between school accountability scores and student success in college, the paper uses socioeconomic status (SES) and the SES of the student's school to provide

some understanding of human and social capital that may be available from both an individual and corporate perspective. Additional variables were operationalized through widely recognized indicators of these factors and include: a) high school grade point average for the core curriculum (Core GPA), eligibility for the state's merit-based scholarship called the Taylor Opportunity Program for Students (TOPS), and Pell grant status.

In addition to the variables noted above, the study includes results for students who dual enrolled in a course that provides both Carnegie and college course credit. Dual enrollment courses are normally taken during the regular school day at the student's school and are normally taught by the school's faculty.

Purpose

The study investigates the relationships between school and individual level variables to determine what factors provide predictability for a student's success in his or her first year of college.

Data Collection/Methods

Data obtained for the study represents the graduating class for the state of Louisiana's high schools for the 2006-2007 school year. From this class, 21,136 students graduated from a Louisiana high school and enrolled in a public four-year institution within the state.

For the purposes of this study, students who enrolled at a public four-year institution were coded as "1" when they successfully completed the freshman year and "0" when they transferred or did not continue beyond the first year.

The Louisiana School Accountability System assigns a baseline school performance score (SPS) comprised of data from three statewide student assessments, two subject area tests, attendance, drop-out rates, and graduation data (Louisiana Department of Education, 2009). Schools with higher baseline SPS earn a higher rating from the state, and we assigned a value (STAR) equivalent to the number of stars each school achieved. A baseline SPS of 140 or greater is equivalent to five stars, four stars to 120-39 points, three stars to 100-119 points, two stars to 80-99, and one star to an SPS of 60-79. Schools scoring below 60 are considered "academically unacceptable," and we coded those as "0" (Louisiana Department of Education, 2009).

Given the small number of schools designated as 4 and 5 star schools, it was decided to collapse these schools into one category.

Data Analysis

Data were analyzed using IBM SPSS 20 employing the following statistical tests: a) Multi-level Modeling, b) binary logistic regression, and c) trend analysis with simple contrasts.

Results

Prior to analyses, descriptive statistics for the sample were collected. Of interest were the disproportionate levels of students in 3 star or lower schools (94.4%) and the small number of students attending four or five star schools (5.6%). Approximately 72% of the students in the sample were TOPS eligible while 40.3 were Pell recipients, suggesting that many of the students who are TOPS eligible could also be categorized as “at-risk.” It is also worth noting that the mean core GPA for the group was 2.51. This information is provided in Tables 1-3.

Table 1: Number and Percent of Students in STAR Status Schools, Pell, TOPS, DUAL and RETENTION

STAR		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STAR 1-3	19100	90.4	94.4	94.4
	2 STAR 4-5	1137	5.4	5.6	100.0
	Total	20237	95.7	100.0	
Missing	System	899	4.3		
Total		21136	100.0		

Pell		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	12627	59.7	59.7	59.7
	1 Yes	8509	40.3	40.3	100.0
	Total	21136	100.0	100.0	

TOPS		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	5813	27.5	27.5	27.5
	1 Yes	15323	72.5	72.5	100.0
	Total	21136	100.0	100.0	

Dual		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	7307	34.6	34.6	34.6
	1 Yes	13829	65.4	65.4	100.0
	Total	21136	100.0	100.0	

Persist	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No	2353	11.1	11.1	11.1
Valid 1 Yes	18783	88.9	88.9	100.0
Total	21136	100.0	100.0	

End of Term GPA	Mean	Std. Deviation	N
1 STAR 1-3	2.50	1.07	19100
2 STAR 4-5	2.83	.96	1137
Total	2.51	1.07	20237

Although students from STAR 4-5 school achieved a statistically significant ($p < .001$) higher GPAs than those students from STAR 1-3 schools, there were no practical difference ($\eta^2 = .005$).

Analysis 1: Predictors of First Year Success in College.

To assess retention rates among the school districts, an unconditional Multi-Level Model analysis revealed that there was significant variability among the school systems in retention rates, indicating that a conditional model could explain additional variability. The conditional model included the following predictors, (a) Pell Grant (1= Yes, 0 =No), (b) TOPS (1 = Yes, 0 =No), and (c) STAR Status (4 = Highest Level to 1 = Lowest Level) with Free/Reduced Lunch and Core GPA as covariates. Holding all other predictor variables constant, results indicated that practical significance were achieved by students attending STAR4-5 schools. These students were approximately twice as likely (1.92) to persist compared to STARS1-3 schools. TOPS recipients were approximately twice as likely (1.82) to persist compared to non-TOPS students. Dual enrolled students were 1.34 times more likely to persist than non-dual students. Reduced status failed to achieve practical significance while Pell Grant recipients failed to achieve statistical significance. See table below.

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)		
							Lower	Upper	
Step 1 ^a	Pell	.041	.050	.673	1	.412	1.041	.945	1.148
	STAR	.649	.166	15.240	1	.000	1.915	1.382	2.653
	TOPS	.602	.056	117.403	1	.000	1.826	1.637	2.036
	High School GPA	.809	.038	443.438	1	.000	2.246	2.083	2.422
	REDUCED	-.032	.007	21.475	1	.000	.968	.955	.981
	Dual	.294	.050	34.225	1	.000	1.342	1.216	1.480
	Constant	-1.473	.221	44.569	1	.000	.229		

Analysis 2: Predicting TOPS Recipients by School Accountability Status.

Students from STAR4-5 schools were almost twice as likely (1.90) to receive TOPS than students from STAR1-3 schools.

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Step 1 ^a STAR	.643	.082	62.074	1	.000	1.903	1.621	2.233
1 ^a Constant	.339	.086	15.411	1	.000	1.404		

Analysis 3: Predicting Pell Recipients by School Accountability Status.

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Step 1 ^a STAR	-.405	.066	37.649	1	.000	.667	.586	.759
1 ^a Constant	-.005	.071	.005	1	.946	.995		

Students from STAR1-3 schools were 1.50 more likely to receive Pell than students from STAR4-5 schools.

Analysis 4: Do Students Receiving TOPS at High Performing Schools Have Higher First-Year College Retention Rates?

Results indicated no statistically significant differences on Retention between TOPS holders from schools with 4-5 star ratings compared to all other schools, $p = .32$.

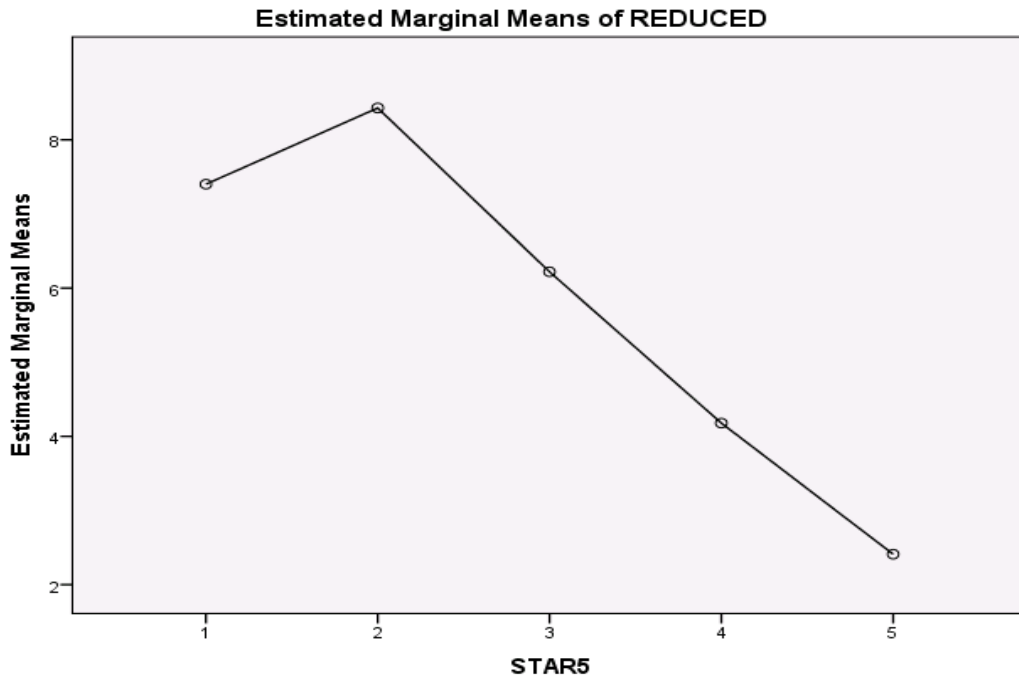
Analysis 5: Is there a relationship between At-Risk students and STAR Classification?

Results indicated a statistically significant trend, $F(4, 19806) = 78.62$, $p < .001$, eta-squared = .14. Simple contrasts supported the linear trend that lower rated schools reported higher levels of Free/Reduced lunches. These results are represented in Figure 1.

Dependent Variable: REDUCED

STARS	Mean	Std. Deviation	N
1	7.40	2.283	4192
2	8.43	3.590	9551
3	6.22	3.156	5300
4	4.18	3.320	323
5	2.41	1.280	445
Total	7.42	3.436	19811

Figure 1: Simple Trend Analysis of At-Risk Populations vs Star Classification



Conclusion

The results from this study provide collaboration for the results from the first year of the study. Students do tend to perform at higher levels in higher performing schools, and this is of some comfort. It is also encouraging that nearly 90% of the students who enrolled as entering freshmen were retained beyond the first year. Student Core GPA provided the single largest predictive value when considering first year success in college. This finding corroborates other research (e.g., Villarejo & Barlow, 2001; Sawyer & Noble, 2002) related to high school GPA as a predictor of college success.

As noted, we are not so much interested in weighing one factor against the other. Rather, our focus is to try and ascertain whether there are high school related effects and/or personal factors that are useful in predicting first year college success, and towards this end the evidence indicates that Core GPA and ACT scores are both of use.

Recipients of TOPS scholarships also demonstrated a strong tendency to outperform those who did not receive the scholarship. The TOPS program has been in place in Louisiana now, in one iteration or another, since 1997 (Louisiana Tuition Opportunity Program for students, R.S. 17:3048.1), and as can be seen from the data set, nearly 73% of the students in this study were TOPS eligible.

Dual enrollment also provided a significant measure of predictability for first year college success. Given the soaring costs of higher education in America in general, and Louisiana in particular, dual enrollment may offer a

means of relief for strapped consumers of higher education. Taking college credit while in high school can produce significant cost savings to higher education. Students enrolled in dual classes in Louisiana have a maximum of \$300 for three hours of college credit provided by the Board of Regents (Louisiana Student Financial Assistance Commission, 2011). Beyond that, students generally tend to pay full tuition costs, a fact which significantly drives down participation in the program. Since the costs of dual classes are largely or completely borne by the secondary institution, there is reason to consider expanding the offerings at significantly reduced costs. As of 2004, there were 18 states in America that required dual enrollment programs to be offered (State Dual Enrollment Policies, 2004).

These findings, taken collectively, point to a strong relationship between the human and social capital available to students and their ultimate success in college. Unfortunately, the reverse is also demonstrated. Recipients of Pell Grants demonstrated no practical effect size when considering the predictive nature of the grant and success in the first year of college. Additionally, when one looks at the trend analysis for percentages of at-risk populations and STAR ranking, there is strong evidence that schools with fewer at-risk students are the higher performing schools. We consider this result to also be largely influenced by the levels of human and social capital available in these contexts.

Throughout America, efforts are ramping up to create policy and programs that have at their core the goal of increasing student achievement. The results of phase II of this study, along with those from phase I, suggest another conversation may be at hand. At present, it could be said that large amounts of time, energy, and resources are being invested in an effort to have the “school make the student,” at least in the case of Louisiana. What we continue to see evidence for is that the student tends to make the school. If this is the case, it may be appropriate to ask, “How do we go about maximizing the human and social capital available to a school?” Such a question creates a significant shift away from viewing teachers as the prevailing resource for human and social capital and moves to a broader conceptual level where the interactions between school, home, and community are viewed as inter-related and perhaps inseparable.

In an article for the New York Times Magazine, Traub (2000) reviewed a study by the University of Kansas. The language acquisition levels for three year olds from single parent, disadvantaged children were compared to three year olds from families whose parents were employed in a profession. The study discovered that the three year olds from the two parent families had a larger vocabulary than the *mothers* of the other children. Such findings pointedly call for rethinking how American schools can best facilitate educational outcomes.

This is not to suggest that interest in and efforts to improve instructional delivery are not important. It does suggest, however, that creating accountability models that try to isolate the teacher’s effect on instructional outcomes from the rest of the human and social capital available to students is

likely ill advised. The trend analysis for Louisiana schools in the accountability model supports this view. To look at the trend and argue the effects are primarily teacher generated, it is necessary to conclude that schools with higher percentages of free and reduced lunch students also have teachers that are marginally effective.

The Louisiana Legislature has just passed legislation that will attempt to assess effect sizes for individual teachers upon individual student achievement. The model takes end-of-course exams from one year, and using regression analyses, predicts the scores of the student for the end of course exams for the next year (Louisiana Department of Education, 2012). Conceptually and practically there are a myriad of issues associated with this thinking. A briefing paper by the Economic Policy Institute (2010) points out some of the methodological and conceptual problems that arise from these types of efforts. For example, many courses have little overlap in content expectations from one year to the next; also, students can be expected to experience learning loss over the summer months, and this is particularly true for those who have little access to human and social capital. Some students will not pass an end-of-course exam and will attend summer school; who will receive credit for the gains acquired at that time: the first teacher, the second teacher, the tutor? Finally, the Louisiana model has no means of controlling for external factors beyond the classroom. Returning to Traub's reporting of the Kansas study, there is no acknowledgement of the impact, or lack thereof, of social and human capital upon learning outcomes.

As noted earlier, we are not trying to isolate effects in our conclusions. Rather, we are interested in factors that tend to contribute to student success in the first year of college. From this perspective it is clear that success in college (and high school for that matter) is highly correlated to human and social capital. We therefore argue that the public would be well served by policy that emphasizes the creation of opportunity for students while not abandoning the roles of teachers and attendant accountability efforts in this process. By so doing, evaluation of teacher effectiveness could be achieved through a rigorous process of observation, a topic for another time. If this is the case, much of the time and effort being placed into rewarding "good" teachers and improving "bad" teachers may be misplaced, given the limitations of the processes being used to achieve these ends and the not so useful results that are beginning to emerge (Economic Policy Institute, 2010). Ironically, if teacher evaluation models are likely as unstable as suggested by the Economic Policy Institute, states that employ these methods are likely to suffer a loss in collective human and social capital as teachers leave the field instead of having to face demands for outcomes they know they cannot produce in isolation.

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