Can Financial Aid Improve Student Success at Louisiana's Community Colleges?

A Study of the Potential Impact of Redistributing State Gift Aid on the Success of Pell Grant Recipients

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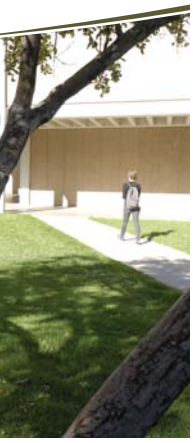
Introduction

This study investigates the relationship between levels of financial aid and student success in Louisiana community colleges.



Community colleges, which now enroll over one-third of the nation's postsecondary students,[1] have become increasingly important to the training of the nation's workforce and as a gateway to bachelor's degree programs. The Obama Administration has emphasized community colleges as key to achieving its goal of the United States having the highest proportion of college graduates in the world by 2020. However, student success rates in these colleges are low. According to the American College Testing Program, for first-time, full-time students, the first-to-second year retention rate at two-year public institutions is 55 percent and the three-year graduation rate is only 27 percent.[2] At the same time, state and federal governments are contending with fiscal constraints, and many states are cutting back on their support to higher education.

As these trends collide, a policy question has come to the fore: Does financial aid affect student retention and completion in the two-year sector? This leads to a related question: Can financial aid be deployed more efficiently to increase student success rates without significantly increasing the aggregate cost of the aid programs?

Student Success and Financial Aid in Louisiana Community Colleges

In this report, we investigate the relationship between levels of financial aid and student success in Louisiana community colleges, with a focus on Pell Grant recipients. We measure success by whether a student earned a certificate or an associate's degree within three years of enrolling as a first-time full-time student or transferred to a four-year Louisiana university within the same timeframe.[3]

We recognize that community colleges serve many other students besides the full-time, degree- or certificate-seeking students we study here, but these full-time students are a core clientele of community colleges that comprised 71 percent of the first-time community college students enrolled in Fall 2006 and Fall 2007. We have excluded students who entered a community college in fall 2006 or fall 2007 on a part-time basis (taking fewer than 12 credit hours in the term) from this study because they are a markedly different population from the full-time students. As shown in Table A in the Appendix, students who entered on a part-time basis were older, less likely to apply for need-based aid (i.e., file a FAFSA), and less likely to receive a Pell Grant or state-based financial aid. Although students may change from full-time to part-time or vice versa during their tenure, those who began on a part-time basis are only 43 percent as likely to receive a degree or certificate or transfer to a four-year institution within a three-year period as are those who entered as full-time students. We also recognize that the majority of students in Louisiana's community colleges do not have Pell grants, but Pell grant students are of particular importance to any discussion of the effects of financial aid because they receive the bulk of federal student aid funds and a considerable amount of state aid also goes to these students.

This report is a companion to our earlier study of the effects of grants and scholarships on student retention in Louisiana's four-year regional state university campuses. In that study, we concluded that by more effectively targeting its scholarships and grants (what we call "Gift Aid"[4]), Louisiana could increase student retention while saving almost $400,000 per year.[5] As this community college study is about to show, strategically targeting financial aid to increase the success of community college students appears to be far less likely to succeed.

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[1] Digest of Education Statistics: 2010, Table 201.

[2] ACT Institutional Data File, 2011: National Collegiate Retention and Persistence to Degree Rates, slides 4 and 7.

[3] Because we are using a state student unit record system, we cannot track the movement of students from a Louisiana Community College to a college in another state or to a private college/university. Although we suspect the number of students who transfer out of state to be relatively small, this means that our estimated student success rates represent a lower bound on the true success rates.

[4] The term "Gift Aid" used in this study refers to grants and scholarships the student does not have to repay. This aid can come through the federal government (e.g., Pell Grants), through state programs, or through institutions themselves. In contrast to Gift Aid, loans must be repaid and hence are less valuable to the recipient. See also definitions on page 3.

[5] The study is available online at www.noellevitz.com/FinancialAidStudies.

Data

In this study, we use student unit record (SUR) data that have been merged with detailed information on student financial aid awards. This integration began in 2005-2006, when Noel-Levitz assisted the Louisiana Board of Regents in adding these financial data to their student unit record system. Data submission and cleaning protocols were developed and a taxonomy was constructed to interpret the myriad of institutional fund codes contained in the institutions' administrative data systems. Louisiana's student unit record system now contains detailed, student-record-level data on the types and amounts of aid that students attending the state's 14 four-year public universities and 11 community colleges received since the 2006-2007 academic year.

In addition to these financial data, the Regents' data system also contains information on students' high school and college performance and retention, transfer, and completion behaviors. Although the Regents had collected these data over the years, they had not systematically used the data to assess the relationship between receipt of financial aid and retention and completion. With the support of the Bill and Melinda Gates Foundation and in partnership with the Regents, we have been exploring this issue. As noted, we previously studied student retention in four-year regional campuses. In this report, we turn our attention to community colleges.

For this study, we extracted community college data for the 2006-2007 through 2009-2010 academic years to address the following questions:

- How are the level and mix of financial assistance related to the rates at which Pell Grant recipients complete their programs, as measured by completing an associate degree or a certificate and/or by transferring to a Louisiana four-year public institution?
- Can we identify flex points in the size of financial aid awards where additional dollars yield diminishing or no returns?
- Can we help Louisiana package aid more effectively by eliminating "overpayment" to some students while shifting that money to students who might otherwise not succeed?

We focus on Pell Grant recipients because they are a population of great interest both nationally and in Louisiana. Moreover, an important aspect of Louisiana financial aid policy was the introduction of the GO Grant for the 2007-2008 academic year, which can increase the level of support Pell Grant students receive. Prior to 2007-2008, most Louisiana state-based financial aid was awarded through the Taylor Opportunity Program for Students (TOPS), a merit-based award. A TOPS award typically covers the cost of tuition at a public college/university. In contrast, the GO grant program provides a need-based component to the state's financial aid plan for Pell Grant recipients who need additional aid to afford the cost of attending college.

Definitions

Cost of Attendance (COA) – Estimated cost, including tuition and fees, books and supplies, room and board, personal costs, and transportation

Expected Family Contribution (EFC) – The amount of money the family is expected to contribute to the student's education, as determined by the Federal Methodology need analysis formula

Student's Financial Need – The difference between the COA and the EFC is the Student's Financial Need

Gift Aid – Financial aid, such as grants and scholarships, which does not need to be repaid

Percent Need Met With Gift Aid – Percent of Student's Financial Need that is met with Gift Aid

Grade Point Average (GPA) – Average of a student's high school grades, converted to a 4.00 scale (4.00 is an A, 3.00 is a B, and 2.00 is a C)

Data Exclusions

To accurately conduct this study, we needed to exclude some of the data we were given. Thus, our analysis was based on records from 11,244 students who were first-time, full-time, degree- or certificate-seeking students enrolled at a Louisiana community college during the fall terms of 2006 and 2007.

Starting with 11,839 student records (see Table 1 on the next page), we removed three groups of students with characteristics that might skew our results: students receiving talent-based awards (e.g., student athletes), students receiving aid because they were a dependent of an institutional employee, and students paying non-resident tuition. Students receiving aid on the basis of special talent have a unique affiliation at the institution, typically membership on an athletic team. Students paying non-resident tuition are not eligible for either TOPS or the GO Grant, and they represent a small fraction of the community college population in Louisiana. In addition, data from students enrolled at the Louisiana technical colleges were excluded, since the focus of this study was on the completion of an associate's degree or a certificate and/or transfer to a four-year institution rather than on the completion of a technical award. Finally, a few records were excluded because they contained incomplete or suspect data. The exclusions described above reduced the overall community college data set to 11,244 records or 95 percent of the original file.

In our earlier study, we documented the strong apparent effect of academic preparation, as measured by high school grade point average (GPA) and ACT composite score, on student retention at Louisiana's regional universities. Because community colleges are open admission institutions, over one-quarter of the students in our database did not have a high school GPA recorded and almost half did not have an ACT composite score. Hence, we excluded these metrics, too. Yet, as we are about to show, even in their absence, our data showed a significant correlation between academic preparation and student success by using a third metric: the number of developmental courses taken—a metric that proved to be highly predictive of completion/success.

As noted later in this report, we excluded recipients of the Taylor Opportunity Program for Students (TOPS) because these students are required to have completed a specified core high school curriculum with grade point at or above a specified minimum among other requirements. As a result, students who receive a TOPS scholarship, are, by definition, better prepared academically than most non-TOPS recipients. The success rate for TOPS recipients is 45 percent compared to 19 percent for non-TOPS participants.

Outcome Metrics Used in This Study

The original data for our study came from the colleges shown in Table 1 below. This table presents key outcome metrics for the colleges in our analysis. Most importantly, we present **our measure of success** in this table, based on student-level data from Louisiana's student unit record system, *combining both transfers and completions*. While many of these rates are still far too low, they are far higher than the **official government graduation rates**,[6] which, as is well-known, do not recognize a key role of community colleges—preparing students for transfer to four-year institutions.

Table 1: Outcome Metrics Used for This Study: First-Time, Full-Time Degree-Seeking Students

	IPEDS Graduation Rates		Total Fall 2006 and 2007		
Name of Institution	Three-Year Graduation Rate (150% Time*)	Four-Year Graduation Rate (200% Time*)	Enrollment	Three-Year Graduate/ Transfer	Graduate/ Transfer Rate
Baton Rouge Community College	3%	7%	2,300	448	19%
Bossier Parish Community College	10%	13%	1,935	505	26%
Delgado Community College	2%	7%	2,928	366	13%
Elaine P. Nunez Community College	21%	28%	202	42	21%
L.E. Fletcher Technical Community College	9%	15%	414	114	28%
Louisiana Delta Community College	10%	10%	362	91	25%
River Parishes Community College	6%	8%	306	63	21%
South Louisiana Community College	7%	9%	731	196	27%
Sowela Technical Community College	35%	42%	715	309	43%
L.S.U. at Eunice	8%	12%	1,350	430	32%
Southern University in Shreveport	14%	16%	596	127	21%
Totals	—	—	**11,839**	**2,691**	**23%**

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* For students completing an associate's degree, 150 percent of normal time is a timeframe that corresponds to completing an associate's degree in three years, whereas 200 percent of normal time is a timeframe that corresponds to completing an associate's degree in four years.

[6] The official government rates are reported in IPEDS, the Integrated Postsecondary Education Data System, run by the U.S. Department of Education. It is the government's main repository of information on the nation's colleges and universities. See http://nces.ed.gov/ipeds/

Demographics of Louisiana's Community College Student Population

Tables 2 and 3 contain a summary of the sample's gender distribution; race/ethnicity; financial characteristics; and receipt of Pell Grants, TOPS Scholarships, and GO Grants. As previously noted, the primary focus of the initial research was on the 40 percent of students who received a Pell Grant (n=4,491).

Table 2: Gender and Race/Ethnicity of Students Studied (11,244 Students)

Description	Number of Students	Percent
Females	6,269	56%
Males	4,975	44%
Asian American	304	3%
Native American	138	1%
African American	3,752	33%
Hispanic American	317	3%
White American	6,282	56%
Unknown	451	4%

Some totals may not equal 100 percent due to rounding.

Table 3: Financial Characteristics of Students Studied (11,244 Students)

Description	Number of Students	Percent of Records
Filed a FAFSA*, demonstrated financial need, received a Pell Grant	4,491	40%
Filed a FAFSA, demonstrated financial need, did not receive a Pell Grant**	886	8%
Filed a FAFSA, did not demonstrate financial need	1,044	9%
Did not file a FAFSA	4,823	43%
TOPS recipients	1,590	12%
GO Grant recipients	676	5%
Dependent students	4,778	74%

* The FAFSA is the Free Application for Federal Student Aid, which students must submit to potentially qualify for Pell Grants and other forms of federal financial aid.

** Pell Grants are awarded to students with Expected Family Contributions (EFC) below a prescribed level, so it is possible for a student to demonstrate financial need without qualifying for a Pell Grant.

Some totals may not equal 100 percent due to rounding.

Findings

1. **As the number of developmental courses in which a student enrolls increases, student success decreases.**

   For Louisiana's community college students, academic preparation, as reflected in the number of developmental education courses taken, was the strongest predictor of student success, exceeding the predictive strength of any financial aid metric. Students who needed even one developmental education course were much less likely to succeed than students who required none. In addition, as the number of developmental courses increased, the likelihood that a student completed his/her degree or transferred to a four-year school fell precipitously.

   As Table 4 shows on the next page, 28 percent of all students who did not enroll in any developmental courses succeeded in earning their degree or transferring. This was over twice the success rate of students who required one developmental course and more than three times the success rate of students who needed three or more developmental courses.

   Note: For our analysis, we excluded recipients of the Taylor Opportunity Program for Students (TOPS) because such students are required to have completed a specified core high school curriculum with grade point at or above a specified minimum and an ACT composite score that varies from 20 to 28 depending upon the level of the award. As a result, students who receive a TOPS scholarship are, by definition, better prepared academically than most non-TOPS recipients. Further, they have received a scholarship usually equal at least to their tuition costs based on academics and not financial need.

   We realize that excluding the TOPS students, which is necessary for our analyses, results in our reporting student success rates that are lower than they would have been had those students been included.

2. Pell Grants do *not* overcome differences in success rates across income levels among students with equivalent academic preparation.

Overall, we found that students with Pell grants succeeded at slightly lower rates than other students. As we see in Table 4, Pell students had a success rate of 17 percent, two points lower than the average for all students and three points lower than students with financial need who did not receive a Pell Grant. These differences were most pronounced among students with no developmental education needs. Few differences in success rates were observed among students that took developmental education courses which reinforces the pattern that we previously noted: even one developmental education course cut student success rates by half, regardless of Pell status.

We should note that compared to needy students who did not receive Pell Grants, Pell Grant recipients came from families with lower incomes and greater demonstrated financial need levels. In short, Pell Grant recipients have fewer outside resources upon which to draw when trying to make up financing deficiencies. While this might suggest that increasing financial aid would improve the performance of Pell students, as we will see on the next page, the data present a more complicated picture.

Table 4: Community College Student Success by Total Number of Developmental Courses Taken—Excluding TOPS Recipients (9,654 Students)
First-time, full-time cohorts that originally enrolled at a Louisiana community college in fall 2006 or fall 2007

Number of Developmental Courses	Three-Year Rate of Graduation and/or Transfer, Excluding TOPS Recipients					
	All Students		Pell Grant Recipients		Demonstrated Financial Need, Not Pell-Eligible	
	Number	3-Year Graduate/ Transfer Rate	Number	3-Year Graduate/ Transfer Rate	Number	3-Year Graduate/ Transfer Rate
None	4,333	28%	1,617	25%	296	30%
1	1,481	13%	576	13%	98	12%
2	1,236	13%	515	12%	88	14%
3 or more	2,604	9%	1,326	9%	167	9%
Total	**9,654**	**19%**	**4,034**	**17%**	**649**	**20%**
Average HSGPA*	2.49		2.48		2.51	
Average need	—		$11,124		$6,628	
Average % of need met with gift aid	—		42%		9%	
Average unmet need	—		$6,171		$5,166	
Average parents' income*	—		$20,983		$50,355	

* Average HSGPA and average parents' income are for the students whose records included these data points.

3. The level of community college students' Need Met With Gift Aid is weakly associated with completion.

To measure the impact of Gift Aid, we calculated each student's Financial Need (Cost of Attendance minus Expected Family Contribution [EFC]), then created a "Need Met With Gift Aid" variable to measure the percentage of that need that was met with Gift Aid from all sources (Percent Need Met With Gift Aid). We believe this percentage measure is a more useful variable than Total Gift Aid, because it accounts for differences between the cost of attendance and the student's EFC.

One goal of this study was to identify "flex points": levels of financial aid that maximize the return to the state's investment while avoiding diminishing returns once aid exceeds that level. However, Table 5 shows little progression in student success until the Percent of Need Met With Gift Aid is 70 percent or greater, a very high level that was only evident among 4 percent of these students.

Looking closer at Table 5, at lower levels of aid we see that success rates increase less than 2 percent as we move up from one category of Need Met With Gift Aid to the next. As we will see later (see Chart 1), even after we controlled for academic preparation as measured by the number of developmental education courses a student took, the Percent of Need Met With Gift Aid appeared to have little bearing on success rates. In short, we see some improvements in student success if aid exceeds 70 percent of Need Met With Gift Aid but those improvements are observed among a very small sample of students and the improvements largely occur among students with no developmental education courses.

Table 5: Community College Student Success by Percentage of Need Met With Gift Aid—Pell Grant Recipients Excluding TOPS Recipients (4,034 Students)
First-time, full-time cohorts that originally enrolled at a Louisiana community college in fall 2006 or fall 2007

	Three-Year Rate of Graduation/Transfer for Pell Recipients, Excluding TOPS Recipients			
Percent of Need Met With Gift Aid	Number of Students Who Graduated/ Transferred in Three Years	Number of Students Who Did Not Graduate/ Transfer in Three Years	Total	Three-Year Graduation/ Transfer Rate
< 30%	213	1,210	1,423	15.0%
30% to < 40%	213	1,021	1,234	17.3%
40% to < 50%	118	619	737	16.0%
50% to < 60%	55	268	323	17.0%
60% to < 70%	26	112	138	18.8%
70% to < 80%	14	28	42	33.3%
80% or more	30	107	137	21.9%
Totals	**669**	**3,365**	**4,034**	**16.6%**

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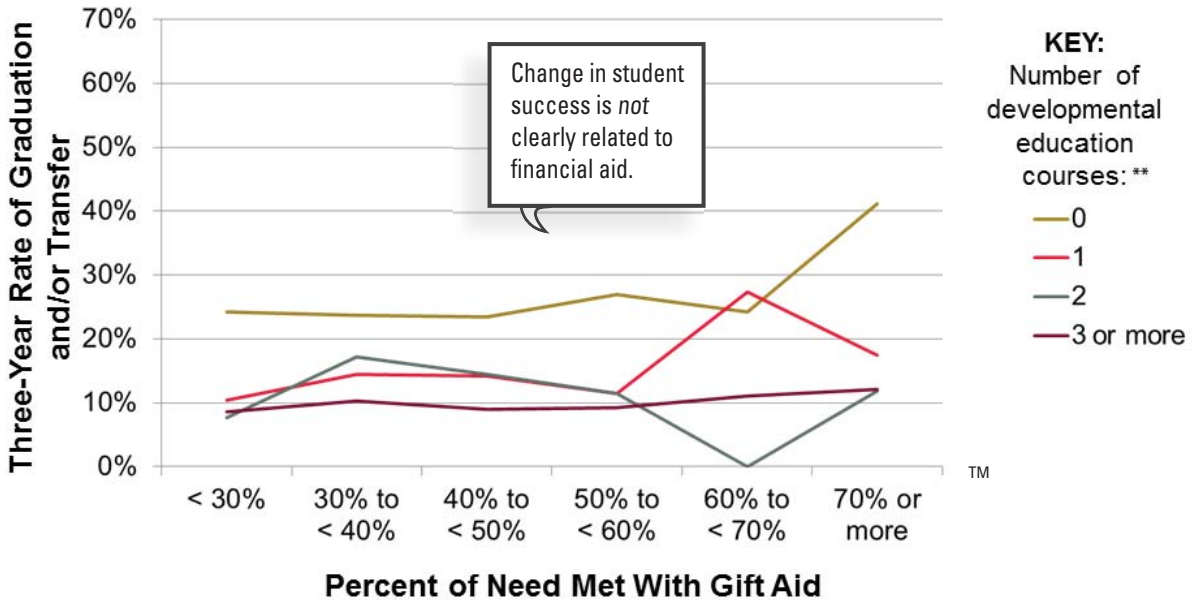
CHI SQUARE RESULTS: Value = 15.1; df = 6; p-value = 0.02

Multi-variable logistic regression was performed to identify what set of characteristics best predict graduation/transfer. The results indicated that the number of developmental courses that a student took was, by far, the strongest predictor. All other characteristics proved to have marginal or no predictive value.

4. **Higher levels of Need Met With Gift Aid are not associated with greater student success for students who took more than one developmental course.**

Chart 1 below displays the differences in completion rates for students with varying percentage levels of Need Met With Gift Aid in four developmental course groupings. For students with one or more developmental courses, there is either no increase in the student success rates as Gift Aid increases or the results are inconsistent. Although there is an increase in the completion rate of students who took zero developmental courses at higher Gift Aid levels, the gain is modest and would require a substantial investment of additional Gift Aid to achieve relatively modest improvements in success rates.

Chart 1: Community College Student Success by Percent of Need Met With Gift Aid*
Pell Grant recipients, excluding TOPS recipients (4,034 students)



* T-test for difference in average percent of Need Met With Gift Aid for students who did and did not graduate/transfer within 3 years:

No Developmental Courses: t=2.84, p-val=.005

1 Developmental Course: t=.63, p-val=0.53

2 Developmental Courses: t=-.28, p-val=0.78

3 or more Developmental Courses: t=.65, p-val=0.51

** Multi-variable logistic regression was performed to identify what set of characteristics best predict graduation/transfer. The results indicated that the number of developmental courses that a student took was, by far, the strongest predictor. All other characteristics proved to have marginal or no predictive value.

Implications and Conclusions: The Effects of Redirecting Aid

As we have shown in this study, financial aid appears to not be an efficient tool to counteract the adverse effects of inadequate academic preparation for students enrolled at Louisiana's community colleges. Given the lack of a strong association of increased aid with student success for students who take one or more developmental courses, directing more aid to these students is not likely to dramatically increase their success. The potential benefits of doing so would be minor and the cost high. Directing more assistance to students taking no developmental courses might have a greater impact but would still be costly.

As we step back and review these findings, we know that many view community colleges as a linchpin to developing the workforce the nation needs. This idea is central to the Obama Administration's higher education policy as evident in his 2012 State of the Union address and his follow-up speech at Northern Virginia Community College. Not surprisingly, given the low costs that community colleges offer relative to bachelor's-degree-granting institutions, as well as their open admission policies and their relative geographic dispersal throughout their states, these colleges have become the door to postsecondary education for over 7 million students. However, students at community colleges often have low success rates, making it difficult to meet the new expectations being set by policy makers.

Students in our study entered their community college seeking a degree or certificate, but too few succeeded. Among first-time, full-time, degree/certificate-seeking students—the students most likely to succeed—official three-year graduation rates average below 12 percent and four-year graduation rates are about 15 percent. In our data, including transfer as a measure of student success, rates after three years are only 23 percent. If students enter community college needing developmental education, their chances of success are even lower.

Every student who does not succeed has invested time and money in pursuing his or her degree. In addition, the taxpayers of the nation and, even more so, the State of Louisiana, have invested substantially in these degree-seeking students who never earn their degree. This study sought to investigate the relationship between financial aid and student success—with a related goal of identifying potential strategies that could increase these low success rates, such as redirecting some student aid to students with weak financial aid packages. However, we found that the success rate of community college Pell Grant recipients did *not* increase substantially as their Percent of Need Met With Gift Aid increased.

While we were confident that for Louisiana's regional university campuses there was a more efficient way to allocate scarce financial aid dollars, we do not believe such a path forward is as evident for community colleges.

The nation is awakening to the need to make more students college-ready *before* they show up on campus. Unfortunately, there are few evidence-based tools that can be deployed to improve the success of students with developmental education needs. We believe that Louisiana should vigorously explore potential avenues to address student educational deficiencies. This is a more promising direction than increasing financial aid to students whose chances of success are 1 in 5.

Appendix

Table A: Comparison of Full-time and Part-time First-time Louisiana Community College Students Enrolled Fall 2006 and Fall 2007

Description	Full-time Students	Part-time Students
Number of enrolled students*	11,244	4,538
Average age	20	26
Average Fall term hours	13	6
% filing a FAFSA	57%	31%
% dependent students**	44%	16%
% independent students**	13%	15%
% with demonstrated financial need**	48%	28%
% with Pell Grant**	40%	23%
% with TOPS	14.1%	0.4%
% with degree/certificate within 3 years	22.4%	9.7%

* Excludes students receiving talent-based awards, employee dependents, and those paying Louisiana non-resident tuition.

** Percentage of the total enrollment, not just those filing a FAFSA.

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Questions about this paper

If you have any questions or comments about this study, please contact Noel-Levitz at 1-800-876-1117 or e-mail ContactUs@noellevitz.com.