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Do TOPS eligibility requirements predict in-system college retention?

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DO TOPS ELIGIBILITY REQUIREMENTS PREDICT IN-SYSTEM COLLEGE
RETENTION?

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ABSTRACT

The Taylor Opportunity Program for Students (TOPS) is a state-funded, merit-based scholarship codified into Louisiana state law in 1997. More than $1 billion in awards have been distributed since the program's inception. By 2006, eligibility for TOPS required a 2.5 high school grade point average on a legislatively specified 16.5-unit college preparatory curriculum, and a minimum ACT score equivalent to the average of the prior year's test takers. These rules were believed to promote greater academic preparedness resulting in higher college retention rates. Only recently has the six-year graduation rate for Louisiana's public universities passed the 30% mark.

The three TOPS criteria (core curriculum, grade point average, and standardized test score) were analyzed using a logistic regression to determine their strength of relationship to first-year retention. A socioeconomic status variable (Pell Grant eligibility) was included to account for the influence of wealth on retention. The sample consisted of more than 17,000 Louisiana first-time freshmen who began their college career in 2006. Students who entered college with TOPS were 2.825 times more likely to continue for a second year of schooling regardless of their socioeconomic status. The high school grade point average on the required courses was the greatest predictor of college retention.

In addition to an explanation of results, the most current political information regarding legislative proposals to amend the program is provided along with policy implications within the context of Louisiana. Finally, a national listing of state-funded, merit-based scholarship programs similar to TOPS is offered.

CHAPTER ONE

INTRODUCTION

In 1988, wealthy New Orleans oilman Patrick F. Taylor spoke to a class of inner city, low-income middle school children and asked about their future ambitions. Upon learning many wanted to go to college but lacked any home support or the financial means, Taylor promised to personally pay their college tuition if they graduated from high school with a 'B' average. In 1989, Taylor took his plan to the Louisiana Legislature and the Louisiana College Tuition Plan, later named the Tuition Assistance Program (TAP) but often referred to as the "Taylor Plan," was established to cover the tuition costs of low-income students who met certain academic criteria, including a 17.5 unit college preparatory curriculum ("Act 789," 1989). Taylor's pledge and the subsequent program were the genesis of a scholarship movement that eventually swept across more than 30 states (see Appendix).

Despite the existence of TAP, a similar program in Georgia, Helping Outstanding Pupils Educationally (HOPE), captured more of the nation's attention. In 1991, Governor Zell Miller introduced a measure to the Georgia state legislature for a state-supported, merit-based scholarship program awarded to those who earned a high school 'B' average (Cornwell & Mustard, 2002, August; Heller & Rasmussen, 2002, August). Six years later, Louisiana reorganized TAP, renamed the program the Tuition Opportunity Program for Students, kept a large majority of TAP's eligibility standards, and removed the income requirement (See Appendix) (2001, July; "Louisiana Taylor Opportunity Program for Students," 1997). In 2008, the Louisiana Legislature honored Taylor's contribution by

renaming the scholarship the Taylor Opportunity Program for Students (TOPS) ("Act 652," 2008).

<div align="center">Evolution of Requirements</div>

When the Louisiana Legislature transitioned TAP into TOPS, the eligibility framework was retained and placed into statute. The eligibility requirements of the revised statute included 16.5 of TAP's original 17.5 units of the college preparatory high school curriculum, a 2.5 grade point average on that curriculum, and an ACT® test composite score of 20 ("Louisiana Taylor Opportunity Program for Students," 1997). Though developed separately, the TOPS-required curriculum mirrored the courses suggested in the federal report "A Nation at Risk," a recommendation on the types of courses that would best prepare youth for postsecondary education (National Commission on Excellence in Education, 1983). The recommendations of "A Nation at Risk" derived from interviews and discussions with colleges and universities admissions offices regarding skills students needed to succeed in college.

The national panel that wrote "A Nation at Risk" had a clear charter to study "the relationships between college admissions requirements and student achievement in high school," and to identify "educational programs which result in notable student success in college" (National Commission on Excellence in Education, 1983). The Louisiana Legislature provided no such charter and did not specify any program goals for TOPS. In Act 1202 of 2001, the Louisiana Legislature established criteria and assigned reporting duties to the Board of Regents, a higher education coordinating body, and mandated an annual submission of statistical items related to TOPS. The law required reporting of

persistence and graduation rates of TOPS recipients at public postsecondary institutions

among other things ("Act 1202," 2001). In their first report, the Louisiana Board of Regents

reiterated the Legislature's intent in creating the program:

- To provide financial incentives as a reward for good academic performance,

- To promote academic success by requiring completion of a rigorous high
  school core curriculum,

- To keep Louisiana's best and brightest in the state to pursue postsecondary
  educational opportunities,

- To promote access to postsecondary educational opportunities (*TOPS
  reporting system: Report to House Education Committee*, 2004, November 16).

"A Nation at Risk" and Act 1202 of 2001 underscore the belief that success in a

college preparatory curriculum is a bridge to college persistence and success. Research

copiously reports on the incentive effects of state-funded, merit-based scholarships. HOPE

was attributed with raising Georgia's average SAT score by 50 points, up to the national

average (Cornwell & Mustard, 2002, August). Nevada's Millennium Scholarship

effectively reduced the number of remedial courses taken in college and improved

persistence rates (Ackerman, Young, & Young, 2005).

<p align="center">TOPS as Scholarly and Policy Topic</p>

The Louisiana TOPS program has distributed more than $1 billion since its

inception, yet little research exists demonstrating any positive effects on retention. Since

1998, Louisiana's average ACT score has improved by 0.8 of one point ("ACT national and

state scores," 2008) and persistence rates improved, but only by 5% (*Retention/Transfer/Exit*

reports, 2008). In terms of total governmental investments, the state, local school districts, and parochial schools have infused enormous sums of money to provide the college preparatory courses required for TOPS eligibility. Research derived from national studies suggests that students who complete a college preparatory curriculum perform better in college, but little research exists supporting the hypothesis for Louisiana students and the TOPS college preparatory curriculum.

Purpose of This Study

The purpose of this study is to determine whether TOPS' eligibility criteria predict in-system college retention. The underlying research objectives that will be used to clarify the predictive ability of TOPS criteria are:

1. Determine the strength of relationship of meeting the TOPS requirements on one-year in-system college retention,

2. Determine the strength of relationship of the ACT assessment on one-year in-system college retention,

3. Determine the strength of relationship of the high school grade point average as computed on the college preparatory curriculum on one-year in-system college retention,

4. Determine the strength of relationship of completing the college preparatory curriculum on one-year in-system college retention,

5. Determine the strength of relationship of socioeconomic status (as operationalized by Pell Grant status) on one-year in-system college retention.

The accompanying literature review will report on the salient issues surrounding each of these research objectives and their significance in the national discussion on state-funded, merit-based scholarships. A thorough retelling of the evolution of public policies fomented into TOPS will be shared. The result of this study should help affix Louisiana's position in the larger national scholarly debate as well as provide clarity about a public policy that has earned significant popularity.

CHAPTER TWO

LITERATURE REVIEW

Program Requirements

Between 1998 and December 2008, the state of Louisiana appropriated more than $1 billion to the Taylor Opportunity Program for Students (TOPS) to entice high school students to complete a college preparatory curriculum and score satisfactorily on a standardized test (*TOPS Payment Summary Spreadsheet*, 2007, April 19). The Legislature expected that students who completed the academic prerequisites would acquire the skills to successfully persist through college (*TOPS reporting system: Report to House Education Committee*, 2004, November 16). This research is intended to study the predictiveness of the TOPS eligibility requirements on retention. The literature review will consist of three major components. The first part will provide a description of the TOPS eligibility requirements and historical factors that influenced their development. The second part will define in-system retention and identify factors that affect retention. Lastly, and most importantly, this review will delve into the predictive ability of college preparatory curricula, grades, and standardized tests (as represented by the ACT) on retention within the public higher education system. This compilation of scholarly work and public policy will establish a framework for measuring the effectiveness of one of Louisiana's most popular publicly supported programs.

Taylor Opportunity Program for Students

The modern Louisiana experience with state-provided merit scholarships began in 1989 with the passage of legislation to create the Louisiana College Tuition Plan, later

named the Tuition Assistance Plan (TAP). The legislation offered a scholarship to students below a certain income level if they completed 17.5 units of a specified college preparatory curriculum (see Table 1), earned a 2.5 grade point average overall, and received a composite score of 18 on the American College Test (now known as ACT). TAP also allowed some leniency by only requiring students to meet 2 of the 3 criteria, but on the third criteria, the student must be within 10% of the requirement ("Act 789," 1989).

TAP had two non-academic requirements. First, a student could not have a criminal record, which was later altered to exempt traffic infractions. Second, a student had to have financial need defined as a family with one child below 21 years of age and an adjusted gross income for the prior four years under $25,000. Families with two children had to have an income below $30,000, and families with three or more children had to earn less than $35,000 ("Act 789," 1989). In 1990, the adjusted gross income calculation was changed from the prior four-year's average to the prior two years' average, an inflationary growth factor was installed to automatically adjust the income brackets, and the base income was $25,000 for a family of one with an additional $5,000 allowance for each additional child ("Act 1055," 1990).

In 1991, the Georgia legislature enacted Helping Outstanding Students Educationally (HOPE) requiring the state to cover the tuition cost at public universities for students who met the qualifications. Eligibility for HOPE included a 'B' average on all high school courses and an annual household income below $66,000. The HOPE law awarded the first scholarships to the freshman class of 2003. The Georgia legislature

increased the income limit to $100,000 in 1994, and removed the income provision in 1995 (Cornwell & Mustard, 2004, October 14).

In 1997, the Louisiana Legislature reorganized the TAP into a similar state-funded, merit-based scholarship called the Tuition Opportunity Program for Students (TOPS) with the first scholarship to be awarded to first-time freshmen entering college in the fall of 1998. The major differences between TAP and TOPS legislation were the removal of the income limitation and the administration of the program. College students already attending college under the TAP provisions were awarded a TOPS scholarship ("Act 1375," 1997; "Louisiana Taylor Opportunity Program for Students," 1997). The Louisiana Legislature retained considerable control of TOPS requiring that all major changes to the program be approved by the full legislature. The statute established the eligibility requirements including residency, the award amount, the duration of the award, and maintenance of the scholarship during college ("Louisiana Taylor Opportunity Program for Students," 1997).

Beginning with TAP and continuing with TOPS, the scholarship's eligibility criteria have consisted of three components. The first is the completion of a legislatively defined college preparatory high school curriculum. TAP required 17.5 college preparatory units, but the 1997 TOPS legislation changed the requirement to 16.5 units as it remained through 2006, before it was returned to 17.5 high school units for the 2007 freshman cohort. The second criterion is a grade point average of a 2.5 on a 4-point scale, which has remained unchanged. The third is a minimum score on a standardized test, either the ACT or SAT assessment. The ACT assessment is the predominant standardized instrument in

Louisiana. The original TOPS legislation and subsequent statutory changes are pegged to the ACT with allowances made for comparable SAT scores ("Act 133," 2000; "Act 1237," 2003; "Louisiana Taylor Opportunity Program for Students," 1997). In 2006, nearly three-quarters of Louisiana high school graduates sat for the ACT assessment ("Average ACT Scores by State: 2006 ACT-Tested Graduates," 2006). The minimum ACT score for TOPS is the 50th percentile composite score of the previous year's test-takers, but that law was altered to mandate a minimum composite of 20 ("Act 1237," 2003).

The use of a college preparatory curriculum, grade point average on that curriculum, and standardized test scores is consistent with methods used to determine admissions at public and private universities nationally, excluding minimum scoring requirements. The National Association of College Admission Counseling (NACAC) conducts its annual Admissions Trend Survey, and college admissions counselors rated the three TOPS criteria the most important considerations when determining admissions. The three TOPS criteria have been rated at the top of the national survey since 1993, the first year reported. The only other factor to rate close to those three was grades in all high school courses (Clinedinst, 2008).

Of the more than thirty state-supported, merit-based scholarships, most include one or more of the criteria used in Louisiana, though few require a combination of as many factors (see Appendix) (Krueger, 2001, July). Individually, each benchmark is imbued with benefits and disadvantages, but collectively, it is undetermined if these criteria can better prognosticate retention. To guide this study and better interpret the results, it is

imperative to understand each requirement and the implications of including those requirements.

<div align="center">College Preparatory Curriculum</div>

As mentioned, TOPS' eligibility criteria have three parts: standardized test score, grade point average, and completion of a college preparatory curriculum. The college preparatory curriculum, sometimes referred to as the core curriculum, is a list of courses consisting of an array of sciences, math, humanities, languages, and social sciences. The development and acceptance of a rigorous curriculum in Louisiana can be traced to at least three events occurring between 1981 and 1984. The TOPS curriculum is the product of historical forces working to improve college preparation almost a decade before HOPE appeared.

The first national movement came from an unlikely source, athletics. According to James H. Wharton, chancellor emeritus of LSU, a discussion about academic standards for college athletes began in earnest in 1981 or 1982. At its annual convention in 1983, the National Collegiate Athletic Association (NCAA) approved Proposition 48 requiring incoming student-athletes to earn a 2.0 high school grade point average on an 11 unit core curriculum and a combined SAT score of 700. Proposition 48 took effect with the entering class of 1986 ("Convention acts on key athletic issues, 1983; J. H. Wharton, personal communication, December 6, 2007).

Coetaneously, President Ronald Reagan convened a blue ribbon education panel called the National Commission on Excellence in Education, to review high school curriculum and post-high school occupational/educational pursuits in 1981. By 1983, the

commission issued its report titled "A Nation at Risk" outlining key problems in the preparation of high school students for the workforce or college studies. The commission issued curricular guidelines consisting of prescribed numbers of units by subject called the "Five New Basics" because of the five general areas that should be studied by students. One of the commission's beliefs was that completion of the suggested curriculum would prepare students for college studies (National Commission on Excellence in Education, 1983). Even after 25 years, numerous studies initiated by the U.S. Department of Education cite the Five New Basics and at least twelve state-supported merit-based scholarship programs require completion of a curriculum similar to the one suggested by "A Nation at Risk" (see Appendix).

Around the same time "A Nation at Risk" was published, Louisiana State University and Agricultural & Mechanical College (LSU) adopted admissions standards consisting of a 17.5 unit college preparatory curriculum. The curriculum mandated the same units recommended by "A Nation at Risk," but required two units of foreign language and one unit of physics. Two years later, LSU adopted a minimum grade point average on the curriculum of a 2.0 on a 4-point scale. In 1995, the minimum grade point average rose to 2.3 (*LSU General Catalog*, 1995). In 2000, a minimum standardized test score was instituted and new freshmen were required to possess a composite score of 20 on the American College Test, now called the ACT, or a comparable SAT score (*LSU General Catalog*, 2000). Persistence rates improved almost immediately. Persistence from freshman to sophomore year at LSU went from 72.6% for the 1988 freshman cohort to 82.7% for the

1997 freshman cohort, the last group before TOPS awards were distributed (*Retention and Graduate Rates of New Freshmen*, 2007, July 17).

By the time TOPS was enacted in 1997, rigorous curricula were already nationally advocated by the National Commission on Excellence in Education and the NCAA, and at the state level, the TAP and Louisiana State University mandated a college preparatory curriculum. Following in that precedent, the Louisiana Legislature adopted a 16.5 unit college preparatory curriculum requiring almost exactly what the Five New Basics suggested. As Table 1 shows, the TOPS criteria of 1997 mimic LSU's admission standard, the requirements of TAP, and the curriculum proposed by "A Nation at Risk."

The National Commission on Excellence in Education differentiated the curricular needs for college-bound and vocation-bound students. For students intending on going to college, the commission selected the college preparatory units based on the skill sets they believed to be the most critical for future success. The English language requirements were molded around the commission's hopes that high school graduates could comprehend and apply what they read, effectively communicate through writing and dialog, and be familiar with the effect of language on American culture and values (National Commission on Excellence in Education, 1983). The requirement for four units of English language has remained unchanged for LSU and TOPS since their respective inceptions ("Louisiana Taylor Opportunity Program for Students," 1997; *Minutes of Special Meeting*, 1984). Even before admissions standards were adopted at LSU, the faculty recommended four years of English courses with an emphasis on composition (*LSU General Catalog*, 1983). By 2006, ACT, Inc., estimated that 67% of that year's test-takers were ready for college-level English

("Selected State Data," 2006). NACAC's national admission survey reported that four years

of English courses were recommended and required by public four-year universities

(Clinedinst, 2008).

Table 1

Comparison of College Preparatory Curriculum

	"A Nation at Risk" (1983)	LSU admissions standards (1984)	Tuition Assistance Plan (1989)	Taylor Opportunity Program for Students (1997)
English	4 units	4 units (English I-IV)	4 units (English I-IV)	4 units
Math	3 units	2 units of algebra; 1 unit of geometry, calculus, trigonometry, or advanced math	2 units of algebra; 1 unit of geometry, calculus, trigonometry, or advanced math	2 units of algebra; 1 unit of geometry, calculus, trigonometry, or advanced math
Science	3 units	1 unit of biology; 1 unit of chemistry; 1 unit of physics	1 unit of biology; 1 unit of chemistry; 1 unit of Earth science, environmental science, or physics	1 unit of biology; 1 unit of chemistry; 1 unit of Earth science, environmental science, physical science, biology II, chemistry II, or physics

(table 1 continued)

Social Studies	3 units	1 unit of American history; 1 unit of world history; 1 unit of civics, economics, or free enterprise	1 unit of American history; 1 unit of world history; 1 unit of civics, economics	1 unit of American history; 1 unit of world history, world cultures, western civilization, or world geography; 1 unit of civics or economics
Computer Science	Half-unit	Half-unit	Half-unit of computer science, computer literacy, or data processing	Half-unit of computer science, computer literacy, or data processing (or substitute at least a half unit as an elective from among the other subjects listed in this core curriculum
Foreign Language	(recommended 2 units for college bound students)	2 units	2 units	2 units
Other Academic Electives	(Arts recommended)	2 units from the other categories or approved arts courses	1 unit of fine arts (or substitute two units of performance courses in music,	1 unit of fine arts (or substitute two units of performance courses in music, dance, or theatre; or substitute two units

(table 1 continued)

	dance, or theatre; or substitute two units of studio arts courses; 1 unit from one of the courses specified in the law	of studio arts courses; or substitute one unit as an elective from among the other subjects listed in this core curriculum)

The National Commission was more specific in their explanation of mathematical skills that students should master in preparation for college. Like the English guidelines, the panel hoped that high school graduates would be familiar with the basics and able to apply those in life. However, the group also recommended that students know geometric, algebraic, and statistical concepts (National Commission on Excellence in Education, 1983). By the time the Five New Basic's were published, the LSU faculty had already advised algebra I, algebra II, and geometry for college preparation, but did not mandate those math courses until the 1988 freshman class (*LSU General Catalog*, 1983; *LSU General Catalog*, 1988). By 1984, LSU suggested that students take additional courses from the primary categories, including math, and by 2002, the university explicitly recommended a fourth math course as a predicate for success in college-level math (*LSU General Catalog*, 1984; *LSU General Catalog*, 2002).

As Table 1 shows, a three-unit math requirement was a common element of college preparatory curricula. The Louisiana Department of Education requires three units of mathematics to qualify for a high school diploma (*High school graduation requirements*, 2006). Nationally, high school students generally enrolled in three math courses, with a number of students opting for more difficult courses. The five most popular math courses were algebra I and II, geometry, trigonometry/analysis, and calculus (Burkam & Lee, 2003, January). Student enrollment patterns in math appear to be consistent with curriculum standards established in "A Nation at Risk," by LSU, and by TOPS, which may also indicate that a three-math standard is not an unreasonable expectation of high school students.

According to ACT, Inc., Louisiana test-takers in 2006 averaged a 20.1 out of a possible 36 on the math portion of the test, which ranked Louisiana 49th of 50 states. By ACT's estimation, only 29% of the test-takers were ready for college-level math ("Average ACT Scores by State: 2006 ACT-Tested Graduates," 2006). Kirst (2001) attributes poor college preparation, especially in math and composition, to a phenomena called "senior slump." Since three math courses are generally all that is required for high school graduate and college admissions, high school seniors hold the perception that they can take a lighter load in their last year (Clinedinst, 2008; Kirst, 2001). Kirst (2001) notes that students lose their math skills prior to college due to a lack of usage. Interestingly, NACAC's national survey reported public universities generally only require 3.1 years of math, but recommended students complete as much as 3.6 years of mathematics, a half-year more than required (Clinedinst, 2008).

The scoring of Louisiana students included college-bound and non-college-bound students, but in the same cohort, 56% of test-takers completed an advanced math course ("Selected State Data," 2006). According to Burkam and Lee (2003, January), students were spurred to take more math courses based on their desire to attend college and their anticipated course of study. Students intending on math or science majors were more likely to enroll in advanced mathematics courses. However, in predicting who would enroll in more math courses, eighth grade achievement was found to be a stronger predictor than college aspirations (Burkam & Lee, 2003, January).

In their study of the course-taking pipeline, Burkam and Lee (2003, January) observed that English and mathematics are sequential in nature, meaning mastery of one course is required for progression to another course. Physical and social sciences are generally not sequential making it more difficult to build proficiency in a broad category. Concentrating for the moment on physical science, the National Commission on Excellence in Education recommended that high school science curriculums instruct students on "the concepts, laws, and processes of the physical and biological sciences," the scientific method and inquiry, application of that knowledge and implications of scientific development. When the New Basics suggested such science courses in 1983, the LSU faculty had already recommended biology, chemistry, and physics. Three science courses are required for a Louisiana high school diploma (*High school graduation requirements*, 2006). The TOPS curriculum only mandates biology and chemistry, giving students the prerogative to select a third science course ("Louisiana Taylor Opportunity Program for Students," 1997; *LSU General Catalog*, 1983). Reporting on high school students from a

national longitudinal study, Burkam and Lee (2003, January) reported 28% of students completed two science units, almost 32% earned three units, and 20% completed four units. The most popular courses, in order, were biology, chemistry, physical sciences (Earth science), and physics (Burkam & Lee, 2003, January). A 2007 NACAC national survey of college admissions officers found that public universities required an average of 2.6 years of science and recommended as many as 3.2 years (Clinedinst, 2008). Burkam and Lee's and NACAC's national findings indicate that Louisiana's high school graduation requirements and the TOPS standard are nationally accepted norms for science education.

The commission differentiated between physical and biological science disciplines. Burkam and Lee (2003, January) used this division to show the course-taking patterns of high school students, and life sciences courses consisting mostly of biology, zoology, honors biology, advanced biology, and ecology. Students who completed a low-level biology generally did not complete any further life sciences, however, students enrolled in a moderate-level biology course generally completed one or two other life science courses, such as ecology and zoology. Students completing an honors or advanced biology course were the most likely to complete higher levels of science courses (Burkam & Lee, 2003, January).

In Burkam and Lee's (2003, January) study, the physical sciences consisted of chemistry, physics, and other physical sciences. Less than half of the students in the study completed one academically challenging chemistry course. Only one-quarter of the students completed a physics course. Of the other physical sciences, the researchers found a naturally occurring segregation of courses. Students enrolled in basic physical or Earth

science only took one physical science course, however, students taking astronomy, geology, environmental science, or oceanography typically took two or three physical science courses. More than half of the students who completed one of the "other" physical sciences did not enroll or complete chemistry or physics (Burkam & Lee, 2003, January).

Within the life and physical sciences, Burkam and Lee's (2003, January) national sample indicated that students take between two and three science courses, matching the TOPS requirement for three science courses. LSU is the only Louisiana public university to require physics, which would have eliminated nearly 75% of the national sample from automatic admissions. Interestingly, Horn and Kojaku (2001) included physics as one of the indicators of a rigorous college preparatory curriculum.

The National Commission on Excellence in Education's Five New Basics included three years of social sciences courses and a computer science course. The intent for social sciences courses was for students to understand their position in a broader historical and cultural context, the evolution of culture and its effects on the world, an understanding of economics, and differentiation of social and governmental structures. Ultimately, the goal was for each student to understand the implications of citizens' responsibilities in a democratic society (National Commission on Excellence in Education, 1983). Computer science was meant to teach students about the communication and information importance of computers and its implementation as a tool for learning the other New Basics. LSU and TOPS have both required American and world history courses, a half-unit of computer science, and courses having subject matter on citizenship and the free market system ("Louisiana Taylor Opportunity Program for Students," 1997; *LSU General Catalog*,

1984). These requirements appear to be consistent with the national collegiate expectation. Nationally, public universities, on average, require 1.5 years of history and 2.4 years of social studies.

The TOPS curriculum deviated from the "A Nation at Risk" report in the requirement of one unit of fine arts and two units of foreign language. The fine arts requirement was not mentioned in the federal report, but foreign language was considered necessary for college-bound students. The commission agreed that "proficiency" with a foreign language would be necessary for cultural understanding, commerce, and diplomacy, and suggested that students start using a foreign language in the elementary grades. The panel cited a 1980 report on the states claiming that only eight states required high schools to offer foreign language, but none required students to complete those courses (National Commission on Excellence in Education, 1983). In Burkam and Lee's (2003, January) review of the National Education Longitudinal Study of 1988, approximately 13,000 students enrolled in foreign language courses and earned about two Carnegie unit credits per student (Burkam & Lee, 2003, January). NACAC reported that in 2007 two years of foreign language was the norm for admission to public universities (Clinedinst, 2008). Louisiana State University's first admissions standards required two units of foreign language, and the TOPS eligibility requirements included a similar secondary language competency ("Louisiana Taylor Opportunity Program for Students," 1997; *LSU General Catalog*, 1988).

The prevailing academic paradigm that influenced TOPS' college preparatory curriculum were likely the same ones that forged NCAA Proposition 48, "A Nation at

Risk", and the LSU admission standard. Louisiana students who complete the required curriculum appear to be enrolling in courses similar to their national counterparts (Burkam & Lee, 2003, January; Clinedinst, 2008). The curriculum has changed little since the legislation creating TOPS in 1997 was enacted. Trigonometry was replaced by a course titled "advanced math", which may include trigonometry, and agriscience I and II were added, although both courses can count for only one science credit ("Act 105," 2005; "Act 800," 2004). In 2005, the 16.5 unit minimum of college preparatory curriculum changed to 17.5 units, the number required under TAP. Students had to select an additional math or science course from among the courses on the predefined list or calculus, an approved advanced math substitute, biology II, chemistry II, physics, or physics II. The mandate for an additional academic course is similar to LSU's 1988 standard, which demanded two academic units in addition to the 15.5-unit curriculum ("Act 105," 2005; *LSU General Catalog*, 1988).

The National Commission on Excellence in Education had a charge to determine which high school courses would best prepare students for college work. Horn and Kojaku (2001) reported that as the rigor of a student's high school curriculum increased, so did their chances of persisting in college. Drawing from the 1996 Beginning Postsecondary Students Longitudinal Study, Horn and Kojaku identified three groups of students by level of curricular rigor. The "core curriculum or less" group consisted of those who had completed some level of work up to the minimum Five New Basics recommendation. A "mid-level" group took the core plus one year of foreign language, geometry, algebra I, and a science component comprised of biology, chemistry, and physics. The "rigorous"

group exceeded the mid-level group by completing second and third foreign language courses, a fourth math course, and an Advanced Placement (AP) course. More than 15% of the core curriculum or less group dropped out of college completely and 23.1% transferred. Of the rigorous group, only 3% dropped out of college and 13.4% transferred to another college. The researchers also found that those with more rigorous curricula were more likely to attend selective institutions and remain on the degree track (Horn & Kojaku, 2001). Horn and Kojaku appear to confirm the goal of the National Commission on Excellence in Education and the Louisiana Legislature that enacted TOPS: a college preparatory curriculum means better retention.

While the correlations point to improved retention, the employment of a college preparatory curriculum is not without controversy (Alexander, Riordan, Fennessey, & Pallas, 1982). Burkam and Lee (Burkam & Lee, 2003, January) acknowledged that differences in courses, teachers, and students confound the educational measuring process. Disparities in the quality of schools offering similar courses can cause inequalities in students' level of learning. The Louisiana Department of Education reported that in the 2005-2006 school year, almost 3% of the K-12 teachers possessed no certification credentials. Though the percentage is small, the proportions varied greatly by district with St. Helena Parish having more than 12% of its teachers uncertified and Tensas Parish employing almost 10% of its teachers without certifications, while 14 school districts had fewer than 1% of their teachers not holding certifications (A. Vaughn, personal communication, July 10, 2007).

Besides the schools, there may be variations in family settings and environments. Students' selection of a college prep curriculum may be a reaction to prior experience, as was found by Burkam and Lee who discovered that high school math achievement is best predicted by eighth grade math achievement (Burkam & Lee, 2003, January). Wei, Horn, and Carroll (2002) reported that Pell Grant recipients were much less likely to complete a college preparatory curriculum, and Berkner, He, Mason, and Wheeless (2007, August) summarized that students with higher family incomes persist at greater rates. Horn and Kojaku (2001) discovered a significant converse relationship between high school rigorous curriculum completion and several socioeconomic factors, such as number of low-income students enrolled in a high school and parents' education. Burkam and Lee (2003, January), Alexander et al. (1982), Berkner et al. (2007, August), and Paulsen and St. John (2002) reported that father and mother's educational attainment influenced high school course enrollment. Among 1997 college bound seniors, Camara and Schmidt (1999) noted that higher levels of parental education tend to lead to higher grades, SAT scores, and rank in class. Alexander et al. (1982) also pointed out that friends' plans to go to college influenced a student's decision to attend college. It must be acknowledged that pre-high school achievement, individual socialization, parental education, and wealth are all factors that likely influence student academic achievement, especially the enrollment in and completion of a rigorous college preparatory curriculum. These differences in backgrounds may also provide more of the explained variance, however, these factors are outside the scope of this study, except for wealth.

Grade Point Average

The second eligibility requirement under study is the grade point average, which is linked to successful completion of the college preparatory curriculum. The TOPS legislation mandated a 2.5 grade point average on a 4-point scale. Grade point averages are common eligibility elements in state-funded, merit-based scholarship programs. Eight programs require a grade point average with a 3.5 average being the highest (in Florida and Mississippi) and a 2.5 average being the lowest (in Arkansas, Louisiana, and Kentucky). Four states require a grade point average on a college preparatory curriculum, Arkansas, Florida, Georgia, and Louisiana (Krueger, 2001, July). Some states have felt compelled to change the grade point average eligibility requirement over time. Nevada heightened the eligibility rules in 2006 by requiring a 3.1 average instead of a 3.0 average, and in 2008, the average rose to 3.25 (Ackerman et al., 2005).

If the intent of TOPS-like scholarship programs is to create incentives for better high school achievement and prepare students for college level work, the evidence is favorable for the programs. In a study of seven scholarship programs, Creech (1998, December) found the possibility of receiving one of these scholarships resulted in an increase in the high school grade point average. When charges of statewide grade inflation were leveled against HOPE, Healy (1997) disproved that claim by showing that the increase corresponded to the rise in the average SAT score by 50 points.

Many studies indicate that the incentive effect of state-funded, merit-based scholarships spur greater academic preparation in high school thus improving students' trajectory through college. In their study of South Carolina's Legislative Incentive for

Future Excellence (LIFE) scholarship program, Cohn, Cohn, Balch, and Bradley (2004) found that high school grade point average was the best predictor of college grade point average (which they used as a proxy for scholarship eligibility). Noble and Sawyer (2002) reported that high school grade point average was more effective than the ACT at predicting college grade point average for those who earn averages between 2.0 and 3.0 on a 4-point scale. Lotkowski, Robbins, and Noeth (2004) found high school grade point average to be the second strongest indicator of college grade point averages, after academic self-confidence which can be tied to preparedness. DeBerard, Spielmans, and Julka (2004) and Murtaugh, Burns, and Schuster (1999) also claimed that high school grade point average was the leading predictor of college performance. Daugherty and Lane (1999) reported that high school grade point average, as well as the ACT, were the strongest predictors of college persistence, even above social factors. It should be no surprise that overall grade point average was the fourth most preferred factor in determining college admissions among universities nationally. "Grades on college preparatory courses" was rated as the most important determinant among admissions offices (73.6% at public universities), according to a 2007 NACAC survey; however, none of the scholarly studies cited here studied the relationship of high school grade point average on a college preparatory curriculum to college retention (Clinedinst, 2008).

It is worth noting that numerous studies cited in this literature review reported on college grade point average as opposed to persistence. In those writings, the use of college grade point average is meant to qualify aspects of scholarship retention, not persistence or retention. College grade point average and persistence/retention can not be regarded as

the same, as retention decisions may be influenced by poor college grades, or other factors such as family conditions, financial issues, and institutional fit (Pascarella & Terenzini, 1991). Colleges may also have differing criteria about what grade point average signifies satisfactory performance worthy of continued academic work.

<div align="center">Standardized Tests</div>

In addition to the college preparatory curriculum and a minimum grade point average, TOPS eligibility requires a minimum score on a standardized test, such as the ACT or SAT ("Louisiana Taylor Opportunity Program for Students," 1997). Eleven state-funded, merit-based scholarship programs mandate the ACT or SAT assessments. Massachusetts, Michigan, Nevada, and Texas use secondary education assessment instruments to serve in lieu of the more recognized ACT and SAT (see Appendix). NACAC reported that such standardized tests were considered the third most important factor in admissions decisions, with almost 68% of admissions counselors rating standardized tests as "considerably important" (Clinedinst, 2008). The SAT consists of mathematics, critical reading, and writing tests, and each component is scored on a scale of 200-800. The traditional composite score is calculated by adding the math and "critical reading" for a maximum of 1,600 ("The SAT: Parent FAQs," 2007). The ACT is a 215-question test with a scoring range from zero to 36, and the composite score is an average of the four sub-components: English, math, science, and reading ("Facts about the ACT," 2007). As Table 2 shows, more Louisiana high school graduates take the ACT than the SAT ("ACT national and state scores," 2008).

Considering such a large majority of Louisiana students prefer the ACT, it is worth more inspection as to its purpose, structure, development, and administration. According to The ACT Technical Manual ("The ACT Technical Manual," 2007), the ACT is a criteria-referenced test, indicating that the test is calibrated to the subject matter students learned as opposed to measuring aptitude, which the manual criticizes. The ACT, Inc., indicates via the manual that the purpose of such tests should be to measure students preparedness for college-level work and makes efforts to ensure that the ACT does correspond to skills necessary for success in college ("The ACT Technical Manual," 2007).

The ACT is developed through information gathered on secondary school curriculum and college preparation. Secondary school curriculum entails the collection of published curricular mandates and textbook content for grades 7 through 12 for every state along with interviews of high school teachers. To determine skills necessary for college preparation, ACT, Inc., surveyed college faculty who are familiar with skill acquisition recommended for college-level work. In both processes, the expectations are confined to the subjects ACT tests: English, mathematics, reading, and science ("The ACT Technical Manual," 2007).

The "English" portion of the ACT test consists of 75 questions intended to gauge grammatical and rhetorical skills. This exam is designed to test a student's ability to use proper English in a variety of situations, as well as force the student to analyze and employ language skills to illuminate concepts and idea. The score for this portion is reported based on responses to the 75 questions. Scaled subscores are provided for the 45-

question "Usage/Mechanics" and 30-question "Rhetorical Skills" subsections ("The ACT Technical Manual," 2007).

The "Mathematics" portion of the ACT is a 60-question examination of a student's abilities in algebra, geometry, and trigonometry. This portion is meant to assess different levels of cognitive skill, ranging from recall of elementary formulas to the use of inference and combination of multiple concepts to solve complex problems. The exam is expects test-takers to have completed up to the beginning of the twelfth grade when taking this test. The 60 questions of the mathematics test are comprised of 24 pre-algebra and elementary algebra items, 18 items on intermediate algebra/coordinate geometry, and 18 items on plane geometry/trigonometry. Scaled results of the subsections are reported, but do not comprise the overall section score ("The ACT Technical Manual," 2007).

The ACT has a "Reading" portion is 40 questions in length and is meant to test a student's skills in comprehension and reasoning. The reading battery applies questions to determine basic understanding, compare-and-contrast ability, and deciphering context using scientific and literary texts. The "Reading" portion is equally divided by "Social Studies/Sciences" and "Arts/Literature" with scaled subscores reported for each ("The ACT Technical Manual," 2007).

The final part of the ACT is the 40-question "Science" portion. Based on ACT, Inc., studies on coursetaking, test-takers are expected to have completed at least two years of science courses, one year of biological sciences and one year of physical sciences. Students are expected to comprehend information provided in graphical forms, descriptive summaries, or "conflicting viewpoints". Students are also expected to analyze and

generalize the data, which corresponds to different levels of cognitive ability. No subscore is reported for the science portion of the ACT ("The ACT Technical Manual," 2007).

The development process for the ACT consists of reiterative content analysis and validity testing. ACT, Inc., reports that it tries to maintain a level of difficulty across various forms of tests while assessing every student's ability as accurately as possible. Statistically, the test is calibrated for the mean score to be around 0.58 with a biserial correlation of 0.2 as a discrimination index (meaning that there is some correlation of ability by test-takers across the various subsections). A "fairness panel" consisting of high school teachers, external examiners, and college faculty evaluate the forms of the ACT for "grade-level appropriateness", educational relevance, and equitable treatment of all socioeconomic groups. Finally, the prototype of a new version of the test is given to a sample population of varying ability to determine the statistical soundness of the prototype against the established versions. Enough variability must occur to adequately demonstrate the abilities of test-takers ("The ACT Technical Manual," 2007).

The use of the ACT and the SAT as a college success prediction tool is both supported and opposed in scholarly literature. Daugherty and Lane (1999) reported that the SAT, along with high school grade point average, were the best indicators of college persistence. DeBerard et al. (2004) agreed with that assessment, however, the SAT accounted for only 18% of the variance in college persistence, and combined with high school grade point average, only 25% of variance was explained. Noble and Sawyer (2002) found the ACT to be a better predictor of first-year college grade point average, the doorway to a successful college career.

Standardized tests have been criticized for bias, on the basis of race, gender, or

socioeconomic status. In a study of SAT and ACT test-takers from 1997, Camara and

Schmidt (1999) reported that White students outperformed African Americans in every

segment of the tests. On the SAT, White students scored about 100 points more on the

verbal and math sub-tests. White students scored no less than 4.5 points better on the four

parts of the ACT. Lohfink and Paulsen (2005) found that first-generation students, who

were mainly minority and lower income, scored 116 points lower on the combined SAT.

The Journal of Blacks in Higher Education reported that in the year 2000 cohort, only 1% of

African American SAT test-takers scored a 700 or greater on the math portion and 1.6%

scored at least a 700 on the verbal section, though African Americans represented 9.5% of

the test-takers. None of the 110,617 African American ACT test-takers scored a perfect 36,

but 93 White students did. Only one African American scored a 35 ACT compared to 660

White students who scored the same ("How the racial scoring gap on the SAT and the

ACT tests restrict educational opportunities for Black students at the nation's most

prestigious colleges and universities," 2000). In a study of South Carolina's LIFE program,

Cohn et al. (2004) showed that White males outscored White females, non-White males,

and non-White females on the SAT. However, in the same study, the SAT improved the

predictability of non-White students' college success (Cohn, Cohn, Balch, & Bradley, 2004).

NACAC established a commission to study the use of standardized tests. Though the

panel advocated an end to using the ACT and SAT, they conceded that the tests measured

what they said they would measure and that significant steps had been taken to mitigate

bias by both assessments (*Report of the Commission on the Use of Standardized Tests in Undergraduate Admission*, 2008, September).

While the debate about the appropriateness of these tests may continue, Louisiana continues to use them for admissions and scholarship determinations. The ACT is the most popular standardized test of Louisiana high school graduates with as many as 88% of Louisiana's high school graduates in 2008 reporting an ACT score. By law, a student seeking TOPS eligibility must score at least the average of ACT test-takers in the prior year with that average score rounded to the nearest whole number. Originally, a composite ACT score of 19 was established as the minimum even if the state's average score would have calculated as a lower score ("Louisiana Taylor Opportunity Program for Students," 1997). In 2003, the program requirement was amended to set the minimum composite score to 20 ("Act 1237," 2003). A comparable SAT score is also acceptable, though most Louisiana students submit an ACT assessment ("Act 1237," 2003; "ACT national and state scores," 2008). In 1998, 76% of Louisiana high school graduates took the ACT and averaged a 19.5 composite score, while the national average was 21. By 2006, Louisiana's composite ACT grew by 0.6 points to 20.1 placing the TOPS-mandated score at 20, while the national average rose by only 0.1 to 21.1 (see Table 2) ("ACT national and state scores," 2008).

<div align="center">Completing TOPS Criteria</div>

Although no comprehensive accounting shows Louisiana students' performance on the three TOPS eligibility criteria, a 2004 Louisiana Board of Regents report conveyed that a majority of high school graduates completed a college preparatory curriculum. Of the 45,226 Louisiana high school graduates in 2003, 56.5% completed the college preparatory

curriculum required for TOPS eligibility. About 58.9% of the 44,569-member 2004

graduating class completed the curriculum.

Table 2

ACT Composite Scores and Testing Rates

Year	National ACT Composite Average	Louisiana ACT Composite Average	Percent of Louisiana High School Graduates Taking the ACT
1994	20.8	19.4	73%
1995	20.8	19.4	75%
1996	20.9	19.4	73%
1997	21.0	19.4	80%
1998	21.0	19.5	76%
1999	21.0	19.6	76%
2000	21.0	19.6	80%
2001	21.0	19.6	80%
2002	20.8	19.6	79%
2003	20.8	19.6	80%
2004	20.9	19.8	87%
2005	20.9	19.8	85%
2006	21.1	20.1	74%
2007	21.2	20.1	79%
2008	21.1	20.3	88%

Though a large number of students fulfilled curriculum requirements, only slightly more

than half qualified for TOPS in both years. Proportionally, the students entering college

with TOPS increased by 15.6% between 1998 and 2003 despite an increase in the minimum

ACT score and a change in the calculation methodology for the grade point average (*TOPS reporting system: Report to House Education Committee*, 2004, November 16). It was not reported what missing criteria kept core curriculum-completing students ineligible.

Retention

College student retention is a seminal issue in higher education research and practice. For decades, researchers and policy developers struggled with defining retention and understanding the causes of attrition, while extraordinary governmental and personal capital were invested in higher education systems. Among the strategies for better retention in higher education are state-funded, merit-based scholarships. Georgia's HOPE and Louisiana's TOPS are enticements for better high school performance and to induce them to perform well in college ("Act 1202," 2001; Creech, 1998, December). Many states' respective legislatures believed that the proper academic preparation and the incentive to maintain the scholarship would translate into better college performance and, ultimately, college success (DesJardin, Alhburg, & McCall, 2002). This section on retention will articulate an operating definition of retention, describe this study's position within commonly accepted retention models, and explain the contributions of this study.

Defining Retention

The scholarly literature reflects an ever-changing concept of persistence and retention. Numerous terms are used to describe the progression or cessation of college studies. Many researchers used the term success as it relates to the goal of their study. For example, DeBerard et al. (2004) used 'success' to describe students' academically satisfactory completion of the first year, whereas Noble and Sawyer (2002) defined

'success' as obtaining a first-year college grade point average necessary to continue studies. Daugherty and Lane (1999) used 'retention' to describe students who remained enrolled at one institution through degree completion, and Cabrera, Nora and Castaneda (1993) used 'retention' in the same manner, but also used the term interchangeably with 'persistence.' Cornwell and Mustard (2002, August) and Dynarski (2002) viewed retention as those students remaining in-state for college. Tinto (1987) used the phrase 'institutional departure' to describe students who leave their initial institution for another institution ('transfers') or simply take a break (also called 'stopout'), and 'system departure' to categorize those students who exit postsecondary education, a practice sometimes referred to as 'dropping out'. Pascarella and Terenzini (1991) used the term 'persistence' to describe a student's ability to remain continually at one institution, similar to the way Daugherty and Lane use 'retention.' 'Persistence' appears to be the term most used in the literature to describe the act of remaining at one institution. For the purposes of this study, the term 'retention' will be used to describe a person who remains enrolled at a postsecondary institution within a state. The use of 'retention' is appropriate considering it is acknowledged that TOPS-like scholarships are a reflection of legislatures' desire to keep students within their state (Creech, 1998, December). Tinto (1982) defends this rationale by observing that retention is determined by the organization exercising jurisdiction, and in the case of the Louisiana Legislature, the organization may be construed as the entire postsecondary education system. One point of clarification is that the term 'maintenance' will be used to describe the act of keeping scholarship eligibility as used by Krueger (2001, July).

Retention Modeling

Perhaps the basis of most recent scholarly research on retention or persistence stems from Vincent Tinto's interactionalist model published in 1975 and improved in 1987. The model attempts to capture all possible variables that can determine one-year college retention, and are generally divided into two categories, social and academic.

Social Integration and Price Response

The social integration component of Tinto's model states that students must assimilate socially to the institution, its culture and mores, and networks of students and faculty. Tinto (1987) amended his earlier work to include institutional commitment and intention (career, life, and otherwise) as major reasons for student departure. He also wrote that social and academic isolation, inability to adjust to life away from home, and incongruence between the institutional goals and the individual are the root causes of attrition. Supporting Tinto's 1987 work, Lohfink and Paulsen (2005) wrote that first generation students had less commitment and support structure than students whose parents attended college. Similar to Tinto, Alexander Astin's (1993) engagement model outlines the process by which a student interacts with the institution thereby building a bond. This institutional relationship was also reported by Pascarella and Terenzini (1991, 2005) to be a key element in students' retention decisions.

In 1993, Tinto further altered the model to include other factors of attrition such as finances, which includes both the effects of aid and students' family financial status. St. John, Cabrera, Nora, and Asker (2000) classified as "price-response" theories those models that attempted to measure the relationship between financial aid and retention. Jackson

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and Weathersby (1975) conducted a meta-analysis of price-response works and found that a $100 change in price resulted in a 2.5% change in enrollment. Leslie and Brinkman (1987) later reported that a $100 increase in price resulted in a 1.8% enrollment decline. Lotkowski et al. (2004) touched on financial need as a cause for departure, but DesJardin et al. (2002) studied the financial aspects of attrition and what aid could do to stanch the departure. Financial aid appeared to have some effect on holding lower-income students in college. The combination of college price and family wealth are common to such study and many find that as income falls, price elasticity grows (Heller, 1997; Jackson & Weathersby, 1975; Leslie & Brinkman, 1987; McPherson & Schapiro, 1994; Tierney, 1980; Wei et al., 2002). As a consequence of family income and belief in the ability to pay, college students altered their choice of college. St. John, Paulsen, and Starkey (1996) described this intersection of wealth and college choice as the "nexus"(St. John et al., 2000). The nexus explains a lower educational horizon imagined by students' ability to pay for certain colleges. Dampened motivation could lead to less institutional commitment (Berkner et al., 2007, August; DesJardin et al., 2002; Labovitz, 1975; Lohfink & Paulsen, 2005; Tierney, 1980; Wei et al., 2002). While TOPS provides a financial incentive, financial aid effects are not a part of this study, but it does lend to the discussion about aid and changes in student motivation.

Tinto's interactionalist model is not the only one mapping the attrition puzzle, though characteristics of it can be found in other models. Peer group is one of the variables that span the social and academic integration hemispheres of the model. Peers offer friendship, acceptance, and encouragement, but also provide academic stimulation and

affect study habits. Astin (1993) and Pascarella and Terenzini (1991, 2005) also reported peer groups as a determinant in college retention, with Astin claiming it was the most important factor in personal development. Lotkowski et al. (2004) reported that social support was important for retention. There are many other social and institutional aspects of the student attrition spectrum, however, this post-entry literature provides indications of non-academic factors at work.

Academic Integration

The second component of Tinto's (1975, 1987, 1993) student interaction model is academic integration which describes a range of academic experiences from pre-college academic preparation to post-entry institutional engagement. Academic integration is composed of several factors, including pre-college academic preparation (Chickering, 1969), participation in classroom discussion, self-confidence (Lotkowski et al., 2004), and dialogue with peers on academic matters (Pascarella, 1985). Lotkowski et al. (2004) came to similar conclusions as Tinto about the non-academic factors, but found the academic factors to be stronger predictors of college success.

Self-confidence, motivation, and commitment are generally components of retention models used to discuss students' beliefs that they will return for a second year of college, graduate from college, or reach their definition of success. Studies suggest that collegiate self-efficacy may start in the beginning years of high school or even earlier. Burkam and Lee (2003, January) indicate that motivation upon entering high school can determine course-taking patterns which can influence decision to go to college. Alexander et al. (1982) went farther by saying the pre-high school factors affect high school course

selection, and lending from the social integration side of the model, the selection of friends who want to go to college also influenced college-going behaviors. One of the important characteristics of TOPS is that Louisiana students have foreknowledge that the program exists and completion of pre-college criteria will result in a scholarship. The option for higher education is presented early to Louisiana students who must decide to enroll in the college preparatory curriculum. Foreknowledge of the scholarship and the state's implied contract may alter the motivation students have to attend higher education.

Thus far, this review has covered many aspects of Tinto's interactionalist model, such as social integration, post-entry college academic integration aspects, and early high school motivation factors. The remaining aspects of the retention spectrum are pre-college academic characteristics, the area in which this study is nested in the larger taxonomy. Many gauges of student preparation are viewed as indications of student motivation, such as high school grades (Daugherty & Lane, 1999; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Murtaugh et al., 1999; Noble & Sawyer, 2002), enrollment in Advanced Placement or International Baccalaureate courses (Ackerman et al., 2005), standardized test scores (Daugherty & Lane, 1999; DeBerard et al., 2004; Hoffman & Lowitzki, 2005; Kuh et al., 2008; Noble & Sawyer, 2002), completion of a college preparatory curriculum (Horn & Kojaku, 2001), and awards. Kuh et al. (2008) used standardized test and high school grades as indicators of academic preparedness, which are common among attrition studies (Cohn et al., 2004; Daugherty & Lane, 1999; DeBerard et al., 2004; Hoffman & Lowitzki, 2005; Horn & Kojaku, 2001; Lohfink & Paulsen, 2005; Noble & Sawyer, 2002). Previously, the TOPS eligibility requirements were enumerated, but to reiterate, they are a college

preparatory curriculum, a minimum grade point average on that curriculum, and a minimum standardized test score. These requirements appear to be consistent with generally accepted measures of pre-college academic preparation. As a matter of policy, the Louisiana Legislature has signaled that they believe TOPS eligibility is a satisfactory measure of pre-college characteristics essential to college retention. It is through this prism of pre-college preparation that this study intends to offer information to public policy and contribute to the national scholarly discussion on academic integration models.

<u>Louisiana Within the National Models</u>

The point Tinto (1987) made about congruence between an institution's character and an individual's intentions affecting persistence requires slightly more discussion as those two factors may be applied uniquely in the Louisiana public higher education system. In *College Choice in America*, Manski and Wise (1983) demonstrated that several factors influence students' decisions to apply to colleges. Parental education, family income (Berkner et al., 2007, August; Paulsen & St. John, 2002), and high school academic performance may affect students' opinions of which colleges they could successfully complete. The extremely narrow spectrum of college selectivity in Louisiana was probably more limited than the national paradigm under which Manski and Wise wrote. Except for LSU, Louisiana's public universities had open admissions requirements until 2005, and very few community colleges existed (Louisiana Board of Regents, 2001; *LSU General Catalog*, 1988). This is notable because all students entering Louisiana public higher education had access to a similarly selective university, meaning the experience from high school to college should have approximately the same level of difficulty.

As Tinto (1987) and Manski and Wise (1983) suggest, college choice is a critical value assessment by students to identify a university appropriate for them and one that students believe they are likely to succeed. The portability of state-funded, merit-based scholarships, like TOPS, gives students flexibility to determine a college within their respective state. Portability is an important characteristic of the federal government's American Competitiveness Grant (ACG), which provides an award to low-income students who complete their state's high school rigorous curriculum requirements ("American Competitiveness and SMART Grants," 2008). Leslie and Brinkman (1987) reported that aid can alter decisions on attendance and college choice. Portability of scholarships and aid may influence choice of college resulting in retention differences.

Retention Summarized

This study will focus on the retention effects of pre-college characteristics, described within the academic integration component of Tinto's interactionalist model. Retention will be defined as a student who remained within Louisiana's public higher education system. It is consistent with the literature to consider the TOPS eligibility requirements as satisfactory measures of pre-college achievement and preparation. The portability of TOPS and the similarity of university selectivity in Louisiana should provide a unique consideration for national dialogue as it alters the nexus considerations of St. John, Paulsen, and Starkey (1996). The contribution to literature may be that this is one of very few statewide, multi-institutional studies on the retention effects of merit-based, state-funded scholarship criteria.

<center>Prediction</center>

If one of TOPS' purposes is to entice students to complete a rigorous high school curriculum in preparation for college work, then a prevailing question is whether TOPS' eligibility requirements actually prepares a student for college work? Existing research suggests that high school grade point average, a college preparatory curriculum, and standardized tests can more accurately predict retention, especially when taken in combination. In this section, each of the three eligibility requirements will be reviewed individually and in combination to outline commonly held understandings of the predictive nature of these factors.

Horn and Kojaku (2001) used regression analysis to determine the predictive effects of a college preparatory curriculum and SAT scores on three-year college persistence. In their study, the SAT was a significant predictor of freshman success, but ceased to be significant in determining second- and third-year persistence once freshman grade point average was included, a phenomenon similarly reported by DeBerard et al. (2004). However, the rigorous college preparatory curriculum remained a significant predictor of college persistence throughout the study (Horn & Kojaku, 2001).

Numerous authors have studied the predictiveness of high school grade point average, though fewer works exist on the grade point average of a specified college preparatory curriculum. Lotkowski, Robbins, and Noeth (2004) found high school grade point average to be the second strongest indicator of college grade point averages, after academic self-confidence which can be tied to preparedness (Lotkowski et al., 2004). Kuh et al. (2008) indicated that pre-college academic achievement (standardized test scores and

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high school grade point average) was a very strong predictor of first-year grade point average, comprising most of the 29% explained variance in first-year grades. Cohn et al. (2004) reported that high school grade point average was the strongest predictor of college grade point average in their study of South Carolina's LIFE program. In that study, high school class rank would have the same predictive ability as high school grade point average as long as the standardized test remained in the regression analysis (Cohn et al., 2004).

DeBerard et al. (2004) conducted a prediction study similar to this proposal by constructing a regression analysis using high school grade point average and SAT score. In their study and those cited in their literature review, the SAT accounted for less than 20% of the variance in college freshman year grade point average. They also found that high school grade point average accounted for less than 20% of the prediction model, and when high school grade point average and SAT scores were combined for prediction, only 25% of the variance could explain college performance (DeBerard et al., 2004). Though DeBerard et al.'s reported variance may be low for high school grade point average and standardized tests, Daugherty and Lane (1999) found them to be the leading indicators of college achievement even when social factors were included in the study.

Cohn et al. (2004) suggested high school grade point average could be replaced by students' class rank as long as the standardized test remained one of the criterion. According to their calculations, the high school grade point average was highly correlated to class rank indicating that one or the other could be used. Without the SAT, the statistical significance of the grade point average and rank lost predictive power. Not only does this

offer a possible alternative to one of the TOPS criteria, it can guide this study's review of the standardized test as part of the TOPS requirements.

In numerous studies, the first-year grade point average was the focus and was considered the gateway to persistence. Noble and Sawyer (2002) used logistic regression models to predict first-year college grade point average. They claimed the "ACT and high school grade point average were effective at predicting college grade point average at the 2.0, 2.5 and 3.0 levels of first-year college GPA." The high school grade point average was slightly more effective at those levels (Cohn et al., 2004; Noble & Sawyer, 2002). Horn and Kojaku (2001) found the SAT to be a good predictor of first-year grade point average, but its predictive ability declined in the second and third years. Murtaugh, Burns, and Schuster (1999) included first-term college grade point average as one of three primary indicators for college success. First-year college grade point average is an interesting point considering the first-year maintenance requirement for TOPS is a 2.3 college grade point average, but rises to a 2.5 for every year afterwards ("Act 165," 1998).

<div align="center">Review Summary</div>

The 1997 TOPS legislation required a rigorous high school curriculum, a satisfactory high school grade point average, and a minimum standardized test score. The intention of the law was to incent better high school academic achievement leading to higher college retention rates. The literature bears out that these criteria individually can somewhat predict one-year college retention. A few studies report predictive ability of all three criteria. Almost no scholarly work exists on these criteria as it relates to state-funded, merit-based scholarships. From a scholarly viewpoint, research of this type can be useful

in understanding the 31 similar programs in the United States. From a policy perspective, it is important to know if the more than $1 billion expended on TOPS has met state goals. To fill those voids, this research will attempt to determine if TOPS eligibility predicts in-system college retention.

To answer the larger research problem about the predictive ability of TOPS criteria on retention, the components must be tested as well as any non-academic factors. As stated earlier, the underlying research objectives that will be used to clarify the predictive ability of TOPS criteria are:

1. Determine the strength of relationship of meeting the TOPS requirements on one-year in-system college retention,

2. Determine the strength of relationship of the ACT assessment on one-year in-system college retention,

3. Determine the strength of relationship of the high school grade point average as computed on the college preparatory curriculum on one-year in-system college retention,

4. Determine the strength of relationship of completing the college preparatory curriculum on one-year in-system college retention,

5. Determine the strength of relationship of socioeconomic status (as operationalized by Pell Grant status) on one-year in-system college retention.

The first four objectives focus on the academic preparation of students, which are arguably within every student's control. The fifth objective is a result of copious studies performed on the effects of wealth on educational attainment. The literature suggests family wealth

may have an effect on one-year retention that could potentially confound any predictive analysis of academic preparation factors. In many instances, Pell Grant eligibility is used as a proxy for socioeconomic status. For that reason, the question must be asked, what is the relationship of Pell Grant eligibility to one-year retention? The reporting of these five relationships should inform the broader question about the predictive effects of TOPS eligibility on one-year in-system retention.

CHAPTER THREE

METHODOLOGY

This study focuses on the predictive ability of TOPS' eligibility requirements on one-year retention within the higher education system in Louisiana. The purpose of this chapter is to describe the optimal research design and techniques, explain the collection and treatment of data, and establish the framework for analyzing the data. Ultimately, this part is intended to establish the manner in which the data will be used to answer questions about the predictive ability of the TOPS criteria and the covariant effects of other factors.

Research Design

This study will employ a nonexperimental research correlation design. According to Gall et al. (2003), a study of a naturally occurring event in which the researcher has no ability to apply a treatment is considered nonexperimental. This describes the situation with TOPS in that the program in its current form has existed since 1997, students prepare for TOPS eligibility from their first year of high school, and the academic performance of students is beyond researcher intervention.

Gall et al. (2003) indicated that studies attempting to forecast future behaviors should use a prediction correlation design. A correlation design would be appropriate since this study will use high school academic performance to predict college performance. Gall et al. (2003) claim that predictive studies are "more concerned with maximizing the correlation between the predictor variables and the criterion." It is expected that a correlation design will provide greater scope by describing the strength of the relationship of TOPS' three eligibility components: completion of the core curriculum, a minimum

grade point average on those courses, and a satisfactory standardized test score. These predictive variables will be tested individually for prediction effects. The dependent variable, or criterion behavior, in this study is one-year retention, defined as the return of a college student for a second year of study at any public postsecondary institution within Louisiana (Gall et al., 2003).

Gall et al. (2003) and Hosmer and Lemeshow (1989) recommend the use of a type of regression analysis called a logistic regression. A logistic regression is preferred when the predictor variables are continuous or categorical types, and the criterion variable is categorical. This recommendation matches the actual conditions of this study in that TOPS eligibility and its three components (the predictor variables) and the criterion variable are all in categorical form.

Regression analyses are the leading statistical procedure in prediction studies because of its ability to describe the strength of relationships between predictor and criterion variables and adapt data from any of the major quantitative designs. This technique is used to correlate more than one predictor variable on the outcome (Gall et al., 2003). Regression analyses are consistently used in a number of predictive studies involving state-funded, merit-based scholarships (Binder, Ganderton, & Hutchens, 2002; Cohn et al., 2004; Dee & Jackson, 1999; Dynarski, 2000; Henry & Rubenstein, 2002; McPherson & Schapiro, 1994). Most closely parallelling this study is one by DeBerard, Spielmans and Julka (2004) who reported on the predictiveness of high school grade point average and SAT score on first-year college grade point average. The SAT and high school grade point average each accounted for less than 20 percent of the variance, and only 25

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percent of variance when combined (DeBerard et al., 2004). Horn and Kojaku (2001) used regression analysis to determine that a rigorous college preparatory curriculum remained a significant predictor of college persistence.

Hosmer and Lemeshow (1989) recommend the use of a logistic regression since the outcome variable, one-year retention, is dichotomous. A logistic regression follows the guidelines of a linear regression model, but offers greater mathematical flexibility. Logistic regression analysis also has the ability to identify relational strength of numerous predictor variables. However, the validity of the study is threatened if the predictor variables were actually reporting on the same characteristic, a issue known as collinearity (Gall et al., 2003). For example, Horn and Kojaku (2001) showed that a rigorous college preparatory curriculum and high SAT score corresponded to higher persistence rates. They also pointed out that students participating in college preparatory curricula were more likely to score well on the SAT, so those two variables were reflecting the same phenomena manifest in different variables. A logistic regression should remove the effects of collinearity by measuring the predictive strength of each criteria individually and in combination.

<center>Population and Sampling</center>

Nonexperimental research designs are applied when a natural phenomenon is occurring and researchers can not apply a treatment. The TOPS program was codified in law in 1997 and the inability to alter the variables means nonexperimental protocols apply to studying the issue. As such, a population must be selected with at least one group possessing the variable under study (Gall et al., 2003). In this study, the TOPS-eligible

group holds the independent variable, while the non-TOPS group does not. Students are self-assigned to their group by their TOPS eligibility status.

TOPS-eligible students are those who have successfully completed a 16.5-unit college preparatory curriculum, earned a 2.5 grade point average on that curriculum, and scored a composite ACT assessment of 20 or equivalent on another standardized test ("Louisiana Taylor Opportunity Program for Students," 1997). This TOPS-eligible group consists of Louisiana residents as defined by the Louisiana Office of Student Financial Assistance. Students who did not receive a TOPS scholarship were classified as "non-TOPS" and include those who were Louisiana residents and had the possibility of acquiring a TOPS scholarship had they met the criteria. Students were categorized on their TOPS status upon entering college and no consideration was given as to whether the students maintained scholarship eligibility for a second year.

The population for this study will consist of first-time college freshmen at all Louisiana public universities in 2006 who also graduated from high school in 2006. TOPS does not require a student to start immediately, however, the internal validity of the study is improved by a population that graduated when TOPS criteria were equally applied to all high school graduates.

The 2006 cohort is also ideal from a public policy perspective. All Louisiana public universities, except for one, implemented a basic admission standard in 2005. Students would have had foreknowledge of college entrance requirements and the statistical variation is reduced by having a smaller variety of university selectivity. The 2006 cohort entered one year after Hurricanes Katrina and Rita, giving students time to return to

Louisiana and complete their high school requirements for college admissions. Lastly, the 2006 cohort was the last entering class mandated to have a 16.5 unit curriculum; the following year's cohort had to complete 17.5 units ("Act 472," 2004).

Data

Information about the 2006 first-time freshman cohort was necessary to conduct this study. The Louisiana Board of Regents collects volumes of data about postsecondary students from a variety of sources. The Board of Regents is mandated by, Act 1202 of 2001 ("Act 1202," 2001; *TOPS reporting system: Report to House Education Committee*, 2004, November 16), to fuse the myriad of databases and compile a single report about TOPS. The data from these sources were used to determine TOPS eligibility. The Board of Regents staff eagerly assisted and offered records of the entire cohort for study, with student identifications removed for security reasons.

The Board of Regents' Statewide Student Profile System (SSPS) collects student progression information from high school graduation through college graduation. The normal SSPS reports collected data on year of high school graduation and year of college entry. In conjunction with SSPS, the Student Transcript System (STS) provided the high school grade point average as used for TOPS eligibility tabulation and identified which students completed the required college preparatory curriculum. The Board of Regents' ACT reports offered the ACT composite scores on which TOPS eligibility was determined, as well as the subsection scores in case beneficial information to the study could be parsed.

The groundbreaking and widely accepted work of Tinto (1987) has connected wealth and educational outcomes. Researchers commonly accept the relationship and have

included such in several studies on income, aid, and persistence (Binder et al., 2002; DesJardin et al., 2002; Dynarski, 2000, 2002, August; Farrell, 2007; Heller, 1997; Paulsen & St. John, 2002; Wei et al., 2002). Though this study does not focus on wealth, exclusion of wealth could jeopardize internal validity and bring doubt on the results. Gall et al. (2003) defined internal validity as the accounting for "extraneous variables" that would affect the study if not isolated. The Board of Regents generously offered the variables of parental income, student income, and Pell Grant eligibility from their Financial Aid Data System (FADS) and the FAFSA to improve the validity of the study. Parental and student income are not appropriate indicators of wealth or socioeconomic status. However, the federal government's use of the FAFSA to index income, holdings, family size, and other variables, makes Pell Grant eligibility a defensible variable representative of wealth (*EFC Formula Information, 2006-2007*, 2006).

The Board of Regents' database categorizes students making this information quantitative, as defined by Tashakkori and Teddlie (2003), and lends itself to "establishing relationships between variables." The Board of Regents records categorical, continuous, and rank quantitative data. Categorical data "refers to values of a variable that can yield two or more discrete, non-continuous scores" (Gall et al., 2003).

Hosmer and Lemeshow (1989) wrote that logistic regressions are the simplest when the independent variables were dichotomous, meaning the individuals belonged or not to a group. To ease the analysis, all data not in dichotomous form was converted. The variables for TOPS eligibility (coded as TOPS), completion of a 16.5-unit core curriculum (coded as BORCORE), or received a Pell Grant (coded as PELL) were originally in

dichotomous form. Students eligible for TOPS were assigned a "1" while those not eligible were recorded with a "0". Students completing the core curriculum were assigned a "1", but those not completing the college preparatory curriculum were recorded as "0". Pell Grant recipients were recorded as "1" and those not receiving the grant were assigned a "0".

Two other variables required more extensive work. The high school grade point average earned on core curriculum courses (CoreGPA) was reported by the actual average, taking a continuous data form. Students scoring a 2.5 grade point average or above were assigned a "1" and those not earning a 2.5 were recorded as "0". Not all students earning a 2.5 grade point average received TOPS, which adds to the ability to determine if a 2.5 average is significant. The new dichotomized variable was coded as CoreGPA_Di.

The composite ACT scores (coded as ACT) were treated similarly. The raw data included each student's ACT score used for eligibility determination. Students earning a 20 composite score were assigned a "1", while those not earning a 20 were recorded as "0". The dichotomized variable was coded as ACT_Di.

The criterion variable, one-year retention, was recorded in the data set as five levels of in-state retention. SSPS recorded the type of institution the student enrolled in by term. The raw data set reflected whether a student from the fall 2006 cohort enrolled in fall 2007 and if they registered at the same institution, another four-year public university, a two-year public college, or another type of institution. The only weakness to this categorization is that students who started at a public institution and either transferred to a private institution or an institution outside of Louisiana are included with students who did not

return to college at all. Since TOPS is meant to keep students in Louisiana and the object of this study is to determine the ability of students to persist, regardless of where, the five levels of the retention variable were consolidated to two: those remaining within Louisiana public postsecondary education and those not. This decision is based on Pascarella and Terenzini's (1991) highly regarded work on the compatibility of students to their chosen college. The two researchers found considerable evidence that college choice affects academic performance. Considering the infinite number of life factors and students' ability to continue their academic work, it seems justified grouping all forms of retention into one category.

<center>Analysis</center>

Analysis of the results will be composed of descriptive statistics, predictive ability of TOPS eligibility criteria on retention, and the influence of other factors. The first part is the descriptive statistics of the sample to include measures of central tendency and measures of variability within the population. This information should report the frequency of students with various characteristics, the average standardized test score, and the average grade point on the core curriculum.

The second part of the analysis will be the predictive ability of the TOPS eligibility criteria on retention. As discussed, a binary logistic regression technique will be used to describe the relationship of TOPS' eligibility requirements on one-year retention. According the Hosmer and Lemeshow (1989), "The odds ratio, ψ, is usually the parameter of interest in a logistic regression due to its ease of interpretation." An odds ratio is a measure of association and can simply be defined as the odds of an outcome among a

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sample divided by the outcome among another sample (Hosmer & Lemeshow, 1989). In the case of this study, the odds ratio will consist of the odds of being retained for one year with the presence of a satisfactory ACT composite divided by the odds of being retained without a satisfactory ACT composite. The same odds ratio will be compiled similarly for the other two eligibility requirements. Lastly, an odds ratio will be calculated for those who were retained one year and possessed all three criteria divided by the odds of those who were retained but did not earn satisfactory scores on all three criteria.

The third part of the analysis will study the association of Pell Grant eligibility to one-year college retention. Similar to the previous section about TOPS eligibility, a logistic regression will be performed and an odds ratio calculated to determine the association of Pell Grant eligibility to retention. While the socioeconomic factors, as represented by Pell Grant eligibility, are not the focus of this study, considerable scholarly research exists showing a connection between wealth and college retention. The analysis of Pell Grant eligibility as a variable will be limited to determining level of significance, strength of association, and component of variance.

A statistical software package, SPSS Graduate Pack 16.0 for Windows, will be used to analyze the data. The raw data will be exported from Microsoft Excel into SPSS. The software will compile the descriptive statistics, conduct the regressions, and report on statistical significance and odds ratios.

As part of the logistic regression operation, SPSS automatically produces a classification table which reports on the accuracy of the regression model to accurately predict if students are retained or non-retained. The analysis will include three aspects of

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the classification table: sensitivity, specificity, and accuracy. "Sensitivity" is the ability of the logistic regression model to predict which students will be retained. Conversely, "specificity" is the model's ability to predict the number of students not retained. The "accuracy" of the prediction model is determined by how many cases were correctly predicted for the respective categories. In other words, accuracy indicates the model's ability to predict how many students were retained and how many students were predicted not to be retained. A "cut value" of 0.75 will be used (Pallant, 2007).

Explained Variance

Along with the logistic regression computation, SSPS calculates a measure of variability, known as a coefficient of determination, to indicate how much of the predictor (or dependent) variable can be attributed to the criterion (or independent) variable (Menard, 2000; Mertler & Vannatta, 2005). Lotkowski et al. (2004) included high school grade point average, ACT, socioeconomic status, and other variables common to retention studies and reported that those predictor variables accounted for 17% of the variability in persistence at a single institution through graduation. Two methods of tabulating a coefficient of determination offered by SPSS are the Cox and Snell (R^2) coefficient and the Nagelkerke (R^2) coefficient. Both Cox and Snell and Nagelkerke are pseudo-coefficients which were developed because the classical coefficients were not adequate for logistic regressions, and both will be used to report explained variance ("Introduction to SAS," 2009; Menard, 2000).

CHAPTER FOUR

RESEARCH RESULTS

The purpose of this study is to determine if a relationship exists between TOPS eligibility criteria and one-year in-system college retention. In other words, the intent is to explore whether the requirements for a scholarship also lead to better performance in college. This chapter is divided into two parts. The first part will be composed of descriptive statistics about the sample. The second part will be a report of the relationship between predictor variables and the criterion variable. Specifically, the second part will attempt to complete five research objectives outlined earlier in the study:

1. Determine the strength of relationship of meeting the TOPS requirements on one-year in-system college retention,

2. Determine the strength of relationship of the ACT assessment on one-year in-system college retention,

3. Determine the strength of relationship of the high school grade point average as computed on the college preparatory curriculum on one-year in-system college retention,

4. Determine the strength of relationship of completing the college preparatory curriculum on one-year in-system college retention,

5. Determine the strength of relationship of socioeconomic status (as operationalized by Pell Grant status) on one-year in-system college retention.

First, the primary objective will be addressed, which is the relationship of TOPS eligibility to college retention. The PELL variable will be used as a covariate with TOPS to study the

effect of socioeconomic status on retention and remove income effects. Next, the relationship of each TOPS component will be addressed individually, and again socioeconomic status will be used as a covariate. In both instances, the relationship of socioeconomic status to retention will be analyzed by using Pell Grant eligibility as a proxy.

Descriptive Statistics

The sample for this study is comprised of all Louisiana high school graduates who finished high school in 2006 and enrolled in a four-year Louisiana public university in the same year. There were 17,123 individuals included the in the original dataset. Approximately 620 records were excluded from the analysis due to unreported or unstandardized (greater than 4.0) grade point averages, unreported curriculum completion and in-system college retention information, and unreported or blatantly inaccurate standardized test scores, including 313 SAT scores that were used for admissions determinations. The adjusted data set comprised of 16,503 records, or 96.4%, of the original dataset. Prior to analysis, the data were examined through the SPSS Explore module. Results of evaluation for accuracy of data entry, missing values, outliers, and assumptions of normality of sampling distributions were satisfactory.

Table 3 reports the number of students according to this study's variables and retention status. Of the 16,503 students reported, 11,167, or 67.7%, qualified for TOPS. More students completed the 16.5-unit college preparatory curriculum than earned the required 2.5 grade point average on that curriculum or scored a 20 composite on the ACT (see Table 3). Students qualifying for TOPS had a mean ACT of 23.66 and a core grade

point average of 3.36. Students who did not receive TOPS had a mean ACT of 18.27 and

core grade point average of 2.52. This study used Pell Grant eligibility status as a proxy for

socioeconomic status. In the adjusted sample, 5,433, or 32.9%, received a Pell Grant (see

Table 3).

Table 3

Frequency of Variables by Postsecondary In-system Retention Status

	Retained	Not Retained	Total
Retention status	13,642 (82.7%)	2,861 (17.3%)	16,503 (100%)
TOPS			
Did not receive TOPS	3,783 (70.9%)	1,553 (29.1%)	5,336 (100%)
Received TOPS	9,859 (88.3%)	1,308 (11.7%)	11,167 (100%)
ACT_Di			
< 20 composite score	2,958 (71.5%)	1,178 (28.5%)	4,136 (100%)
≥ 20 composite score	10,684 (86.4%)	1,683 (13.6%)	12,367 (100%)
BORCORE			
Not completed core	656 (60.7%)	424 (39.3%)	1,080 (100%)
Completed core	12,986 (84.2%)	2,437 (15.8%)	15,423 (100%)
CoreGPA_Di			
< 2.5 core GPA	1,923 (66.1%)	987 (33.9%)	2,910 (100%)
≥ 2.5 core GPA	11,719 (86.2%)	1,874 (13.8%)	13,593 (100%)

(table 3 continued)

	PELL		
No Pell Grant	9,493 (85.8%)	1,577 (14.2%)	11,070 (100%)
Received Pell Grant	4,149 (76.4%)	1,284 (23.6%)	5,433 (100%)

Note. For this study, "retention" is defined as students who began at a public four-year university and returned for a second year of schooling at any Louisiana public postsecondary institution.

Concern about the socioeconomic status of students was a consistent refrain in the literature. Several researchers, especially in the case of Georgia's HOPE, feared that less affluent students were participating at disproportionately lower rates (Dynarski, 2002; Heller & Rasmussen, 2002, August; Wei et al., 2002). To provide further information about Pell Grant students, a cross-tabulation of students' TOPS and Pell Grant status was compiled. There were roughly as many students who were ineligible for both TOPS and Pell (2,596) as there were students who received both Pell and TOPS (2,693) (see Table 4). The comparison also shows that 49.6% of the Pell Grant recipients also received a TOPS scholarship (see Table 4). The largest cell in the cross-tabulation was the one representing TOPS recipients who were ineligible for a Pell Grant (8,474). Without further analysis, it would be presumptive to say that less affluent students received a proportional number of the TOPS scholarships. However, it is worth noting that 24.1% of TOPS recipients received a Pell Grant, in a state where about 28.4% of children live at or below the poverty level (U.S. Census Bureau, 2005).

From the prima facia information provided by the descriptive statistics, Louisiana students who entered a public four-year university were likely to have completed at least

one of the three TOPS criteria: a 20 composite score on the ACT, completed a college

preparatory curriculum, and earned a 2.5 grade point average on that curriculum. The

Louisiana Board of Regents reported similarly in 2004 (*TOPS reporting system: Report to

House Education Committee*, 2004, November 16). Less obvious was the relationship

between the TOPS criteria and retention, and what effect Pell Grant eligibility had on

retention. The next section will explain the relationship of the TOPS sub-components on

retention, as well as the effects of socioeconomic status.

Table 4

Cross-tabulation of Students' TOPS and Pell Grant Status

	TOPS		
	Did not receive	Received	Total
Did not receive Pell Grant	2,596 (23.5%)	8,474 (76.5%)	11,070 (100%)
Received Pell Grant	2,740 (50.4%)	2,693 (49.6%)	5,433 (100%)
Total	5,336 (32.3%)	11,167 (67.7%)	16,503

Relationships to Retention

The research objectives of this study focus on understanding the relationship of

TOPS eligibility requirements to in-system college retention. Using a logistic regression

technique, this study measured the relational strength of TOPS eligibility, the ACT, the

prescribed college preparatory curriculum, and high school grade point average on one-

year in-system college retention. The predominant literature also suggested a

socioeconomic metric to determine if wealth influenced retention, so a Pell Grant status was included in the study as another variable.

<p style="text-align:center">TOPS Eligibility and Retention</p>

The first research objective was to determine the relationship between TOPS eligibility and in-system one-year college retention. Students desiring a TOPS scholarship had to meet three criteria: complete a 16.5-unit college preparatory curriculum, earn a 2.5 grade point average on that curriculum, and earn a composite ACT score of 20 or greater. As Table 5 demonstrates, all of the TOPS components were statistically significant when considered separately. Understanding the relationship of the TOPS components was important for understanding the requirements underpinning TOPS eligibility.

A logistic regression was employed using TOPS as the predictor variable and RETYNR as the criteria variable. PELL was inserted into the logistic regression as a covariate. Since TOPS requires three academic criteria, a separate logistic regression was necessary to determine if the combination of requirements was more predictive of college retention than any of the three criteria individually and to what degree. Table 5 shows the results of the logistic regression using TOPS and PELL, and RETNYR was used as the criterion variable.

Even at the 0.01 level, TOPS eligibility was a statistically significant variable in predicting college retention. TOPS students were 2.825 times more likely to be retained at a postsecondary public institution than a non-TOPS student (see Table 5).

The regression model had a prediction accuracy of 69.2% (sensitivity = 88.3%; specificity = 29.1%; cut value = 0.75). Results of the logistic regression analysis indicated

that the full model against the constant-only model was statistically significant (χ^2 = 778.37, df = 2, p < 0.01). The model summary indicated that the variables provided some explanation about what affects retention. The Cox and Snell pseudo-R^2 estimated that the variables were responsible for 4.6% of the explained variance, while the Nagelkerke pseudo-R^2 placed explained variance at 7.3%. Of all of the factors contributing to college retention, the four variables used in this logistic regression accounted for roughly 4.6% to 7.3% of all influences leading to retention.

Table 5

Relationship of TOPS and Pell Grant to Retention

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B) Lower	Upper
TOPS	1.038	0.044	563.611	1	0.000	2.825	2.593	3.077
PELL	-0.343	0.044	59.942	1	0.000	0.709	0.650	0.774
Constant	1.073	0.039	763.469	1	0.000	2.923		

Note. Cox and Snell R^2 = 0.046, and Nagelkerke R^2 = 0.076.

Socioeconomic Status, TOPS, and Retention

The literature strongly suggested that socioeconomic status may be a significant factor in college retention. If that is correct, there was a possibility that wealth could also have some effect on TOPS eligibility. In this study, Pell Grant eligibility was used as a proxy for socioeconomic status. Since socioeconomic status is not a voluntary state, Pell

Grant eligibility was treated as a covariate with the intention of separating the wealth effects on retention from the pre-college academic preparation effects.

Adopting the method used in studying TOPS eligibility effects, a logistic regression was employed and PELL was introduced as a covariate variable. RETNYR again served as the criterion variable. Pell Grant status was found to be a statistically significant variable on retention. Regardless of Pell Grant status, TOPS students were 2.83 times more likely to be retained than non-TOPS students. When accounting for TOPS status, Pell Grant recipients were 0.709 times less likely to be retained than their non-Pell counterparts. Surprisingly, the odds ratio was the smallest of the five predictor variables, indicating that it may not be the insurmountable obstacle previously thought (see Table 6).

<u>TOPS Components and Retention</u>

TOPS requires a minimum standardized test score, completion of a 16.5-unit college preparatory curriculum, and a 2.5 grade point average on that curriculum. The TOPS requirements were shown to be statistically significant in predicting one-year in-system college retention. Considering that students must expend considerable effort on the surpassing the standard on TOPS' three components, it would be instructive to know the relation of each of the components on retention.

Table 6 shows the results of the logistic regression using the three TOPS criteria and Pell Grant eligibility. The three TOPS criteria and Pell were the predictor variables, while one-year retention is the criterion variable. The classification table reported that the regression model had an accuracy rate of 78.4% (sensitivity = 85.9%; specificity = 35.7%; cut point = 0.75), meaning the model was able to correctly predict the retention status of

78.4% of the students, a moderately strong prediction. The model summary indicated that

the variables explained some of the effects on retention. Results of the logistic regression

analysis indicated that the full model against the constant-only model was statistically

significant (χ^2 = 830.36, df = 4, p < 0.01). The Cox and Snell pseudo-R^2 estimated the

variables were responsible for 4.9% of the explained variance, while the Nagelkerke

pseudo-R^2 placed explained variance at 8.1%. Of all of the factors contributing to college

retention, the four variables used in this logistic regression accounted for roughly 5% to

8% of all influences leading to retention.

Table 6

Logistic Regression Results of TOPS Criteria and Retention

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
							Lower	Upper
ACT_Di	0.411	0.052	62.720	1	0.000	1.508	1.362	1.669
BORCORE	0.479	0.075	41.161	1	0.000	1.614	1.395	1.869
CoreGPA_Di	0.779	0.055	199.046	1	0.000	2.180	1.956	2.429
PELL	-0.355	0.045	60.915	1	0.000	0.701	0.642	0.767
Constant	-1.435	0.113	162.06	1	0.000	0.238		

Note. Cox and Snell R^2 = 0.049, and Nagelkerke R^2 = 0.081.

<u>ACT and Retention</u>

The first of the research objectives was to determine the relationship of the ACT to in-system one-year college retention. As described previously, ACT scores were divided into two groups with the separating factor being the required composite ACT score of 20. Students with a composite 20 ACT score and above were segregated from those scoring lower than a composite 20. This dichotomous variable, ACT_Di, served as a predictor variable.

The retention variable, RETNYR, was also a dichotomous variable and it served as the criterion variable. Students who returned to any Louisiana public postsecondary institution for the beginning of the 2007-08 academic year were considered "retained," while those not found to continue their studies in 2007 were "not retained."

A logistic regression was employed to measure the relationship of ACT score on one-year in-system college retention. An ACT composite score of 20 or greater was found to be statistically significant at the 0.01 level. The odds for retention were 1.508 greater for students earning a 20 ACT composite score or higher (see Table 6).

<u>College Preparatory Curriculum and Retention</u>

The second research objective was to determine the relationship of the college preparatory curriculum to in-system one-year college retention. To earn TOPS, students were required to complete a 16.5-unit college preparatory high school curriculum. This core curriculum was composed of four English courses, three specified math courses, three specified science courses, three units of social sciences and history, two foreign language courses, a half-unit of computer science, and one course of an academic elective or fine art.

The Board of Regents collected the high school transcripts and reported whether or not a student completed the college preparatory curriculum (BORCORE). The dataset reported a dichotomous variable: 'Y' for students satisfactorily completing the core and 'N' for not completing the curriculum. Approximately 15,423 students, or 93.5% of the adjusted sample, completed the college preparatory curriculum.

A logistic regression was conducted using BORCORE as the predictor variable and RETNYR as the criterion variable. At the 0.01 level, there was a statistically significant difference between students completing the curriculum and those who did not. Students completing the core were 1.614 times more likely to be retained in the second year (see Table 6).

High School Grade Point Average and Retention

The third research objective was to determine the relationship of the high school grade point average on in-system one-year retention. TOPS eligibility requirements mandate that a student earn a 2.5 grade point average on the prescribed 16.5-unit college preparatory curriculum. The dataset reported the grade point average, which was converted to a dichotomous variable of those earning at least a 2.5 grade point average and those not (CoreGPA_Di). As Table 3 showed, 13,593 students, or 82%, earned a 2.5 grade point average on the college preparatory curriculum.

A logistic regression was conducted using CoreGPA_Di as a predictor variable and RETNYR as the criterion variable. There was a statistically significant difference between student with a 2.5 grade point average and those without, even at the 0.01 level. A student with a 2.5 grade point average was 2.18 times more likely than students without to be

retained. This is the largest odds ratio among the three TOPS components. However, this may be confounded by the small number of students in the adjusted sample who earned less than a 2.5 grade point average in high school and attended a university. Students with an average that low may not consider attending a four-year university (see Table 3 and Table 6).

Variable Raw Data and Retention

In keeping with the legally prescribed requirements for TOPS eligibility, the ACT and CoreGPA variables were dichotomized. However, the adjusted dataset included the actual ACT composite scores and grade point average as calculated on the core curriculum. In the course of the study, it became apparent that a logistic regression of the same variables, but with the raw data would yield important insights into the analysis and subsequent discussion sections of this study.

A logistic regression was conducted similarly to the one reported in Table 6, except the actual ACT and CoreGPA scores were used (see Table 7). The variable "ACT" represents each student's ACT score by which they were admitted to university. The variable "CoreGPA" is each student's grade point average as tabulated using only the prescribed TOPS curriculum.

The use of actual scores altered the prediction regression and odds ratios of the variables on retention. First, ACT odds ratio of 1.037 reported in Table 7 was smaller than the ACT_Di odds ratio found in Table 6. By dichotomizing the ACT variable (ACT_Di), the regression was unable to discern the difference between students scoring a 22 ACT from those scoring a 35 ACT. Therefore, the odds of students scoring a 20 or higher ACT

composite are very high compared to those not scoring a 20. However, the regression

using raw scores was able to discern the differences in aptitude captured by the ACT and

was able to calculate an odds ratio based on variations in scores. The same was true for the

grade point average variable: Table 6 reported a 2.18 odds ratio for CoreGPA_Di, but

Table 7 reported a 2.378 odds ratio for CoreGPA. The ability of the model to differentiate

between raw scores improved the regression's ability to predict, and in the case of grade

point average, raw scores were better predictors than a dichotomized grouping.

Table 7

Logistic Regression of TOPS Components and PELL Using Original Data

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
							Lower	Upper
ACT	0.036	0.007	23.52	1	0.000	1.037	1.022	1.052
BORCORE	0.278	0.075	13.85	1	0.000	1.321	1.141	1.529
CoreGPA	0.866	0.045	375.44	1	0.000	2.378	2.179	2.596
PELL	-0.319	0.046	47.64	1	0.000	0.727	0.664	0.796
Constant	-1.904	0.142	180.15	1	0.000	0.149		

Note. Cox and Snell R^2 = 0.068, and Nagelkerke R^2 = 0.113.

The BORCORE and PELL variables were naturally dichotomous, and the use of raw

data altered the regression model and the predictive ability attributable those two

variables. When used in a logistic regression with actual scores, the PELL variable had an

odds ratio of 0.727, slightly higher than the 0.701 reported in Table 6. The odds ratio for

BORCORE decreased from 1.614 in Table 6 to 1.321 in Table 7.

The logistic regression model was consistent with the results accompanying Table 5

and Table 6. The classification table associated with Table 7 reported that the regression

model had an accuracy rate of 76.4% (sensitivity = 86.6%; specificity = 33.7%; cut point =

0.75). Results of the logistic regression analysis indicated that the full model against the

constant-only model was statistically significant (χ^2 = 1,160, df = 4, p < 0.01). The model

summary indicated that the variables provided some explanation about what affects

retention. The Cox and Snell pseudo-R^2 estimated the variables were responsible for 6.8%

of the explained variance, while the Nagelkerke pseudo-R^2 placed explained variance at

11.3%. The logistic regression using raw scores was able to explain more variance than the

regressions reported in Table 6 and Table 7.

<div align="center">Summary of Retention Variables</div>

TOPS eligibility, TOPS' individual components, and socioeconomic status were all

found to have strong relationships to in-system college retention, whether it was positive

or negative relationships. Pell Grant eligibility was reported to be a strong predictor of

non-retention in college. Socioeconomic status is a major determinant in college retention,

however, TOPS eligibility is a stronger predictor of retention.

CHAPTER FIVE

DISCUSSION

The State of Louisiana has expended more than $1 billion on TOPS scholarships since 1998, encouraging students to work harder in high school and ultimately be successful in college. Thousands of high school students since 1998 have spent their time and exercised their talents in an effort to achieve a TOPS scholarship. Studies about the effectiveness of the program are sparse and mostly limited to descriptive statistics that do not uncover the mechanics behind the requirements. This study was designed to illuminate the relationships between TOPS eligibility criterion and in-system one-year college retention. This research question should not only speak to the effectiveness arguments of TOPS and possibly the other states' programs, but also make a contribution on how such state policies contribute to scholarly retention literature.

This chapter interprets the research findings as they correspond to the research objectives. Additionally, the limitations of the study are reviewed and address concerns of generalizability. Potential implications to both the policy and scholarly perspectives will be provided. Lastly, future research will be outlined that will improve the body of knowledge as it relates to TOPS and the thirty programs like it in the United States.

Conclusions of TOPS Eligibility

This study set out to determine if TOPS eligibility affect in-system one-year retention. From a policy standpoint, a considerable amount of resources are dedicated to higher education and the state of Louisiana is interested in students successfully completing a postsecondary program and earning a credential, which will ultimately serve

workforce needs. Considering the TOPS requirements are in legal statute, the state of

Louisiana has indicated which criteria they believe leads to greater college retention. This

section will report and analyze the five research objectives, which were:

1. Determine the strength of relationship of meeting all three TOPS

   requirements on one-year in-system college retention,

2. Determine the strength of relationship of the ACT assessment on one-year in-

   system college retention,

3. Determine the strength of relationship of the high school grade point average

   as computed on the college preparatory curriculum on one-year in-system

   college retention,

4. Determine the strength of relationship of completing the college preparatory

   curriculum on one-year in-system college retention,

5. Determine the strength of relationship of socioeconomic status (as

   operationalized by Pell Grant status) on one-year in-system college retention.

The first research objective, and perhaps the primary one, was to determine the

relationship of TOPS eligibility to in-system one-year college retention. As the analyses

demonstrated (see Table 5), a student meeting all of the TOPS eligibility requirements

were 2.83 times more likely to return for a second year of college, regardless of their

socioeconomic status. This supports the idea that high school curriculum, grade point

average, and standardized test scores were significant predictors of college retention when

factored together. Only 11.7% of TOPS recipients were not retained for a second year of

schooling (see Table 3).

As it relates to the literature, the results were not surprising given that many studies indicated that better academic preparation resulted in greater chances of college retention. As previously mentioned, the three TOPS components are commonly used admissions criteria nationally and often cited as pre-college academic indicators (Clinedinst, 2008; Daugherty & Lane, 1999; Hoffman & Lowitzki, 2005; Horn & Kojaku, 2001; Kuh et al., 2008; Noble & Sawyer, 2002). The results of this study clearly support the long-standing use of TOPS' academic criteria in estimating readiness for college-level work and as predictors of college retention.

The second research objective was to determine the relationship of the ACT to one-year in-system retention. In the logistic regression using ACT_Di, students meeting TOPS' ACT requirement of a 20 composite score were 1.508 times more likely to return for a second year of schooling than those who did not meet the requirement (see Table 6). In the logistic regression model using the raw ACT scores, the odds ratio was only 1.037 (see Table 7). Both odds ratios were statistically significant, though the 1.037 odds ratio is hardly distinguishable in the practical sense. An odds ratio of 1.0 would indicate that students with or without a 20 ACT composite score would have an even chance of being returning for a second year.

The ACT requirement presents an interesting policy consideration. The ACT score was the least predictive of the three TOPS criteria, but the ACT was the most likely of the criteria to hinder scholarship eligibility (see Table 3). In other words, students had the most difficulty achieving the 20 ACT score, but it was the least reliable predictor of retention. About 71.5% of the students who did not earn the 20 ACT score were retained

for a second year, the largest percentage among students not meeting any one of three the criteria. This is not to say the ACT should be abandoned, merely an observation that the standardized test ought to be studied more closely. Interestingly, TOPS' precursor, TAP, permitted students to receive the scholarship if they were within 10% one requirement, but met two of the other requirements. In this instance, the permissible ACT score would be an 18 composite.

This analysis of the ACT adds to the growing national debate over the appropriateness of using standardized tests. Only 12 state-funded, merit-based scholarship programs require a standardized test score (see Appendix). There were a number of researchers and professionals who opposed the use of such tests because of doubts about the validity of high-stakes tests or the inability of the tests to predict college success, especially among specific racial or economic groups (Ackerman et al., 2005; Burkam & Lee, 2003, January; Camara & Schmidt, 1999; Cross & Slater, 1997; Heller & Rasmussen, 2002, August; *Report of the Commission on the Use of Standardized Tests in Undergraduate Admission*, 2008, September). In a study by Horn and Kojaku's (2001), which includes many variables similar to this study, the SAT was not an appropriate predictor of persistence when socioeconomic status was factored. However, two separate logistic regressions found the ACT to be a statistically significant predictor of retention. Other studies support this study's finding in that standardized tests were valid prediction variables (Daugherty & Lane, 1999; DeBerard et al., 2004; Dee & Jackson, 1999; Lotkowski et al., 2004; Noble & Sawyer, 2002).

The third and fourth research objectives were in regards to the relationship of the

college preparatory curriculum and the grade point average on that curriculum to in-

system one-year retention. Completion of the 16.5-unit college preparatory curriculum and

a 2.5 high school grade point average were both statistically significant predictors of

college retention regardless of socioeconomic status. As reported previously, more than

90% of the students who enrolled at a university in 2006 had completed the core

curriculum, but only 82% had met the grade point average requirement. In the logistic

regression with all dichotomous variables (see Table 6), the odds ratio for BORCORE was

1.614 and 2.18 for CoreGPA_Di. When raw scores were used (see Table 7), the odds ratio

for BORCORE was only 1.321 and CoreGPA improved to 2.378. Of the three academic

TOPS components, CoreGPA and CoreGPA_Di were the most predictive in their

respective analysis.

It seems counterintuitive that the requirement that takes a multi-year commitment

to complete, the core curriculum, was the criteria most likely to be fulfilled, but there may

be other reasons. One possible explanation could be that the 16.5-unit core curriculum

closely parallels the Louisiana high school graduation requirements. Both require four

units of English, three units of mathematics, three units of social studies, and three units of

science, totaling at least 13 courses that could potentially meet TOPS and high school

graduation requirements (*High school graduation requirements*, 2006). Another reason that

Lotkowski et al. (2004) and Alexander et al. (1982) reported was that students not

interested in college or believe they lack the skills to succeed self-selected themselves out

of the college preparatory curriculum. The four-year high school commitment to complete

a college preparatory curriculum may be a key indicator of students' motivation and self-efficacy. Commitment and content mastery could further be measured by using grade point average as a proxy as is common in many retention studies (Alexander et al., 1982; Burkam & Lee, 2003, January; DesJardin et al., 2002; Hoffman & Lowitzki, 2005; Horn & Kojaku, 2001; Kuh et al., 2008; Lotkowski et al., 2004; Noble & Sawyer, 2002).

The fifth research objective was to determine the relationship of socioeconomic status to retention. Socioeconomic status was found to be a predictor of non-retention, or attrition. Students' Pell Grant status was included in all three logistic regressions conducted for this study, and PELL was fairly constant as a predictor with the odds ratio slightly above 0.70 in all cases. Students qualifying for Pell Grants were 0.721 times more likely to be retained, meaning Pell eligible students had a less than 1-in-1 chance of returning for a second year of college. Again, this is not surprising given that the literature has abundantly shown that to be the case nationally. However, there is reason for hope considering that TOPS students were 2.825 times more likely to be retained regardless of socioeconomic status. This indicates that students who met the TOPS eligibility requirements may be better positioned to overcome economic effects. Policymakers may be pleased to know that the effects of students' economic status can be overcome as it relates to college retention measures.

<div align="center">Implications</div>

From a governmental perspective, the results are insightful and timely. First, the results indicated that the state's investment in TOPS was consistent with its desire for greater college retention. Students completing the TOPS requirements were more likely to

progress to a second year, regardless of socioeconomic status. The TOPS requirement was a significantly better predictor of retention than the three components separately. Second, the Louisiana Board of Regents was contemplating a new master plan for postsecondary education at the time this research was presented. In the posted draft of the plan, the desired six-year graduation rate was 48% (Louisiana Board of Regents, 2009). This study did not provide information on the graduation rates of TOPS students, however, the literature was explicit in saying that students who return for a second year of college are much more likely to return in subsequent years. Horn and Kojaku (2001) reported that students completing a rigorous college preparatory curriculum, earning good grades, and performing well on standardized tests were retained for a third year of college at much greater rates. Perhaps the Board of Regents should consider recommending college entry standards equivalent to TOPS eligibility requirements. This seems especially appropriate given the growth of Louisiana's community colleges.

As mentioned previously, the results about the predictiveness of the ACT can only add to the national debate of the appropriateness of standardized tests. The ACT was a statistically significant predictor of college retention, though its predictive ability was the weakest of the criteria and it was the most difficult of the criteria to fulfill. Only 12 of 30 or so state-funded, merit-based scholarships required the ACT or SAT. Based on the results, it could be argued that the ACT requirement be studied in greater depth to determine better possible applications of the test. Perhaps the ACT subject sub-scores could yield better predictive ability than the composite score. Louisiana's high school battery may also be a consideration if that assessment could be proven to be a better indicator of content

mastery. This is not meant as an indictment of standardized tests, which may serve as the only mechanism measuring content knowledge across schools. Such standardized tests may be the only quality check on the content of the core curriculum and the grade point average, which are locally controlled.

Not addressed in this study were the additional TOPS stipends awarded to students earning higher scores and high school grade point averages. Students earning a 23 composite ACT and a 3.0 grade point average on the core curriculum could receive the TOPS "Performance Award," a $400 per year stipend. An $800 per year TOPS "Honors Award" goes to those earning a 27 composite ACT and a 3.0 grade point average. In 2006-2007, the state awarded 14,806 Performance and Honors stipends to all eligible college students, with the total scholarships in those two categories amounting to almost $49.2 million (*TOPS Payment Summary Spreadsheet*, 2007, April 19).

Limitations

Despite best efforts and intentions, there were limitations that confined the generalizability of this study and affected its usefulness in policy considerations. This section is organized to address the methodological limitations first, impediments to policy implementation, and issues of national scholarly concern.

There were some limitations of the study due to the employment of certain methods. Members of the sample were first-year university students and were all grouped into two categories, TOPS and non-TOPS, regardless of wider, naturally occurring variations in their talent. Also, a very large proportion of Louisiana's public universities had similar admissions requirements, which could have been an indication that the rigor

of those universities was similar. By lack of differentiation between students and universities, the explained variance due to the selected variables used in this study could be limited. The study was conducted using the legally mandated requirements for TOPS, so alterations in the variables that could have yielded more explained variance were removed from consideration. The only variable having legally recognized levels was the TOPS stipends for greater achievement, the Performance and Honors awards. Other than these academic subgroups, the characteristics of the sample were those used by Louisiana state government to determine TOPS eligibility. Should measures be taken to understand the between-group variance more, subgroups within the sample could have been based on ACT composite scores and high school grade point averages, a practice somewhat replicating the stipend awards and found in various studies (Dee & Jackson, 1999; McPherson & Schapiro, 1994; Noble & Sawyer, 2002). The non-TOPS group could have been divided into smaller groups consisting of people with various academic characteristics. The advantage of non-TOPS subgroups over the employed method would have been that students meeting two criteria could potentially form a large subgroup within the non-TOPS cohort. This approach would be similar the TAP eligibility requirements, the precursor to TOPS.

Attributable variance was also affected by the decision to make the retention variable dichotomous. The original dataset included a multi-level retention variable that indicated if a student persisted in the same university or transferred to another institution (four-year college, two-year college, or other). This study took the position of policymakers in deciding that the optimal outcome was for students to be retained in any

institution within the statewide system. This position was strengthened by the fact that TOPS is portable, which assumes policymakers' intention to allow students to go where they think they could be successful. With these arguments, the retention variable was made dichotomous. This is not the traditional focus of researchers who prefer investigating persistence at a single institution. The leading retention models cited in the literature review were based on single-institution persistence and the variables that affected persistence, such as college choice, selectivity, academic integration, social integration, financial aid, etc. Had this study limited the scope to single-institution persistence, it would be likely that the predictor variables would have had greater odds ratios. However, the results may have been more predictive of college admissions standards or geographically confined students rather than TOPS requirements.

Policy implications were broader than methodological ones. The study only includes students who entered four-year universities. Louisiana has a burgeoning community college system that has grown even since the 2006 freshman cohort entered college. In Louisiana, there is growing interest in the community college system and the articulation agreements that assist in the transferability of college credits. Had this study included community college students, some conclusions could have been reached about TOPS and two-year institutions.

The raw dataset indicated only whether a student completed a rigorous high school curriculum or not. Had the dataset requested information about high school transcripts, regressions could have determined the predictive ability of certain courses or families of courses. This was an especially pertinent policy issue considering that changes in the

TOPS curriculum or courses within the curriculum have been considered and are likely to be considered in the future.

In 2008, Louisiana state Sen. Ben Nevers authored a bill that would have removed the TOPS curricular requirements from statute and made it equivalent to a program called "Core4" to be determined by the state Board of Elementary and Secondary Education and the Louisiana Board of Regents. The proponents of the change argued that "Core 4" would have strengthened TOPS requirements by mandating four units in these categories: math, English, science, and social studies courses. The opponents of the change disagreed, arguing that the proposed additions to the curriculum were not of sufficient academic quality to improve the chances of college retention. In fact, the central tenet of "Core4" opponents was that the TOPS curriculum should only include courses shown to improve the chances of college retention. As an example, both sides of the argument agreed to a fourth mathematics course, but disagreed on the content of the courses. A course called "financial math" was among the proposed additions, but was staunchly opposed by those who believed the course lacked academic rigor. The bill was unsuccessful in gaining passage in 2008 (J.H. Wharton, personal communication, March 30, 2009).

Sen. Nevers was successful in passing legislation permitting high school teachers to promote "critical thinking skills, logical analysis, and open and objective discussion of scientific theories being studied including, but not limited to, evolution, the origins of life, global warming, and human cloning" ("Act 473, Louisiana Science Education Act," 2008). Opponents of the bill contended that the bill was simply a disguise for the teaching of creationism and would have implications on science education. Though Act 473 was

approved after the time under study, understanding the relationship between high school science courses and college could have contributed to the conversation.

Within the national scholarly discussion, this study was limited in two ways. First, the study lacked several variables that could contribute to college retention discussion. Though this study was limited to just the predictive ability of TOPS eligibility, the seminal works of Tinto, Pascarella, Terenzini, Bean, and Cabrera revolve around the selection and assimilation into college life as primary indicators of college persistence and graduation. The pre-college academic variables considered in this study were determined roughly 15 months prior to students' enrollment for a second year of schooling. In those months, students were likely to have encountered many other variables affecting their retention, such as identifying peers, interaction with faculty, and learning independence. Had other variables been considered, perhaps more variance could be explained and/or less variance attributed to TOPS eligibility.

A second limitation was an analysis of college choice. The RETNYR variable was originally reported in five levels, each level indicating the persistence and transfer of students within the sample. For purposes of this study, the RETNYR variable was dichotomized, but the dataset offered some data that could have provided information about college choice. It was also possible that college choice could have explained more variance since it could be surmised that students would migrate to institutions they felt were a better fit. However, the similarity in selectivity of Louisiana public universities may have provided little difference than if the RETNYR variable had remained as a multi-level variable.

Future Research

This study has led to many questions about state-funded, merit-based scholarships, eligibility requirements, public policy implications, alterations in the national scholarly literature, and equity. There are many studies that can stem from this one that will not only improve understanding about Louisiana's TOPS program, but add to the general understanding about pre-college academic attributes.

First, a revision of this study to include the TOPS Performance and Honors awards would be a relatively simple adjustment to the current study. Students with higher grade point averages and standardized test scores could a simple extension of this study.

A second follow-up study with enormous policy implications would be an analysis of the variables used in this study to determine if an index could be devised that would permit students of varying performance to qualify for TOPS. This "sliding scale" approach might be able to better determine which of the students who did not earn a 20 composite ACT score would still have a reasonably good chance as college retention. In a study of this type, a multiple regression may be employed to help determine the variations of academic preparation that could result in higher probabilities of retention. This could also be used to determine single-institution persistence and perhaps address factors related to college choice.

Third, the results from the logistic regression regarding the ACT feed the national debate about standardized tests. The ACT was still found to statistically significant. However, Arizona, Massachusetts, Michigan, Nevada, and South Dakota preferred state assessment scores for scholarship eligibility (see Appendix). Perhaps a comparison of the

ACT, SAT, and Louisiana's state assessment exams would yield better information on students' content knowledge and the predictive ability of those tests.

Fourth, the quality of high schools should be studied further. There are numerous reasons why schools may vary dramatically, such as rates of certified teachers, proximity to large cities, and proportion of at-risk youth in schools. The advent of "Not Child Left Behind" and the myriad of school accountability programs lead one to wonder if schools have any substantive effect on the learner and their college retention. Another way to consider school quality would be to use Heller and Rasmussen's (2002, August) approach which was to identify the percentage of high schools' enrollment that received free or reduced lunch. This may also add to the Pell Grant variable used in this study by improving the description of socioeconomic status.

The fifth direction for future study may be the college preparatory curriculum, particularly in the policy arena. As mentioned before, Louisiana lawmakers recently considered changing the TOPS course requirements and may do so again in the future. It would be interesting to understand the predictive ability of math, science, English, social studies, foreign language, and arts courses. Comprehending the importance of these courses could be the key to better high school curriculum and improved college transitions. Additional high school courses may not be the answer to better college performance as the Core 4 argument might suggest. Courses taught for college credit may be the way to hone students' skills and keep them on the college track. Horn and Kojaku (2001) found that Advanced Placement courses were predictive of three-year college retention. Louisiana also has a dual enrollment program, called Early Start, which pays for

high school students to take college courses. Utah has a very ambitious program combining dual enrollment with a state-funded, merit-based scholarship program that may prove to be a better model.

Lastly, a study following the methods of Horn and Kojaku (2001) would be an extension of this study. Horn and Kojaku performed a three-year retention analysis encompassing more variables, especially academic variables. One of the limitations of this study was that the dataset had to be from 2006, meaning that only a one-year retention analysis could be conducted. In fall 2009, the 2006 cohort will be starting their third year and a new study would provide clearer answers about the predictive ability of pre-college academic preparation variables.

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APPENDIX

LISTING OF STATE-SUPPORTED, MERIT-BASED SCHOLARSHIP PROGRAMS

This is a compilation of state-funded scholarship programs similar to Louisiana's TOPS and Georgia's HOPE. Unless otherwise noted, the recipients are required to meet a residency requirement and the scholarship is only redeemable at an institution within the awarding state. To be included in this listing, the programs must meet the following criteria:

1. The scholarship must be provided by the State, not the institution of attendance. The exception to this is if there is one higher education system within the state and the scholarship is awarded by that system AND the scholarship is portable to any institution in that state.

2. Some level of academic achievement must be met. For example, students may be required to earn a grade point average or complete a rigorous curriculum. Need is an acceptable criteria, as long as it is coupled with an academic criterion.

3. Scholarship eligibility rules must be published in advance, so that students have a salutary knowledge of expectations.

4. Scholarship eligibility rules must be achievable by any student. Programs that require a student to graduate in some percentile or other "moving targets" are not included. Also disqualified are programs that have a finite amount of money that may not cover all of the students who met the criteria. For inclusion on this list, meeting eligibility requirements necessitates a scholarship.

5. The scholarship must be portable.

Some state programs offer additional stipends for achievement above the basic eligibility requirements. However, this compilation does not include those additional stipends.

State and Program	Current Eligibility Requirements	Current Maintenance Requirements	Award and Duration	Source Information
Arkansas, Academic Challenge Scholarship Part 2	Complete a 16-unit college preparatory curriculum and earn either a 2.5 GPA or 19ACT/730SAT. Sliding scale exists. Income limitations exist.	2.5 college GPA and complete 27 credit hours the first year and 30 hours thereafter and perform 20 hours of service	Award amount is contingent on lottery proceeds; lowest amount is $2,500.	http://www.adhe.edu/challenge/
Arizona, Arizona Board of Regents High Honors Endorsement Tuition Scholarships	Complete 1 of 3 Criteria: 1. Complete 16 core units with a B or better in each course (or earn an acceptable AP score, or a 4 on the IB exam for that subject); 2. Earn a 3.5 GPA or be in top 5% of class; 3. Score satisfactorily on state assessments	One year award with option for renewal	Tuition only.	http://www.ade.state.az.us/asd/tuitionwaiver/parents-students.asp
California, CalGrant A (Entitlement)	3.0 high school GPA and have financial need	Maintain half-time enrollment	Amount depends on choice of college, cost of attendance, other aid offered, and need.	http://www.calgrants.org/index.cfm?navId=11 http://www.csac.ca.gov/doc.asp?id=105 http://www.csac.ca.gov/pubs/forms/grnt_frm/CalGrantFactSheetapril2008.pdf
Colorado, Colorado Centennial Scholars	3.75 HSGPA and complete a 15 unit core curriculum	3.5 college GPA		http://highered.colorado.gov/Finance/FinancialAid/Policy/guidelines_2007.pdf http://highered.colorado.gov/Publications/Policies/Current/i-partf.pdf

(appendix table continued)				
Connecticut, Capitol Scholarship Program	Demonstrate need, AND: Top 20% of HS class OR 1800 SAT (all 3 parts combined)	Completion of FAFSA	Up to $3,000	http://www.ctdhe.org/SFA/pdfs/CSPApplication.pdf; http://www.ctdhe.org/SFA/sfa.htm#CT%20Aid%20for%20Public%20College%20Students
Florida, Florida Academic Scholars Award	3.5 GPA in 15-unit college preparatory curriculum, score a composite 1270 SAT/28ACT, and complete 75 hours of community service.	Earn a 3.0 GPA and complete 6 credit hours per term	100% of tuition and allowable fees.Duration is up to 110% of program of study as long as completed within 7 years of high school graduation.	http://www.floridastudentfinancialaid.org/ssfad/bf/fasrequire.htm; http://www.floridastudentfinancialaid.org/ssfad/bf/renewpg.htm
Florida Florida Medallion Scholars Award	3.0 GPA in 15 credit college-preparatory curriculum, score a composite 970 on the SAT or a 20 on the ACT.	2.75 college GPA and complete 6 credit hours per term	75% of tuition and allowable fees or 100% at a community college. Duration is up to 110% of program of study as long as completed within 7 years of high school graduation.	http://www.floridastudentfinancialaid.org/ssfad/bf/fmsrequire.htm; http://www.floridastudentfinancialaid.org/ssfad/bf/renewpg.htm
Georgia, HOPE Scholarship	3.0 GPA in a college preparatory curriculum or a 3.2 GPA in a technical/career prep program.	Maintain a 3.0 GPA. No minimum credit hours at public institutions, but 12 credit hours if a private school student	Duration of 127 credit hours. Award equals full tuition, mandatory fees and a $150 book allowance, per semester at public institutions. Students attending private institutions receive $3,500 per semester.	http://www.gacollege411.org/finaid/scholarshipsandgrants/hopescholarship/default.asp
Idaho, Opportunity Scholarship Program	High school diploma	Satisfactory academic progress		http://www.boardofed.idaho.gov/scholarships/opportunity.asp http://www3.state.id.us/oasis/1998/S1477.html
Idaho, Robert R. Lee Promise Category B Scholarship	3.0 GPA or 20 ACT	Enroll in 12 credit hours per year and maintain satisfactory	$300 per semester for 4 semesters	http://www.boardofed.idaho.gov/scholarships/promiseb.asp

(appendix table continued)				
		academic progress		
Indiana, Twenty-first Century Scholars	2.0 HSGPA, be from low income family (Income limits: http://www.in.gov/ssaci/2380.htm), complete a pledge in 8th grade	Maintain full-time enrollment defined as 12 credit hours per semester.	Tuition for 8 semesters within a 10-year period	http://www.in.gov/ssaci/2345.htm
Iowa, All Iowa Opportunity Scholarship	2.5 high school GPA	Enroll in 3 credit hours per term	Tuition and fees, up to 2 years	http://www.iowacollegeaid.gov/commissioncentral/schgrants/sch.html, http://www.iowacollegeaid.gov/docs/file/progfactsheets/AIOSchFactSheet.pdf
Kentucky, Kentucky Educational Excellence Scholarship	2.5 GPA in any one year of high school and complete 22 high school units. A bonus award available for those scoring 15ACT/710SAT (bonus award varies based on GPA and standardized test, but can range from $36 to $500).	2.5 college GPA during freshman year and a 3.0 college GPA in subsequent years. Proportional awards made for students carrying less than full-time with a minimum of 6 credit hours per term.	8 semester maximum within 5 years of high school graduation. Award available for eight semesters. Award covers cost of tuition and some fees.	http://www.khea.com/keeshome.html www.osfa.state.la.us/schgrt6.htm
Louisiana, Taylor Opportunity Program for Students (TOPS)	2.5 high school GPA on a 17.5 unit core curriculum, and a 20 ACT composite score [Additional stipends available for higher levels of achievement.]	Earn 24 credit hours each academic year and maintain a 2.3 college GPA in the first year and a 2.5 college GPA every year after		
Massachusetts, John & Abigail Adams Scholarship, 2005	In the highest 25 percentile in their district on the 10th grade Massachusetts Comprehensive Assessment System (MCAS); Scored 'Advanced' in English or Math test, and	Continuous full-time enrollment at public institution, maintain a 3.0 gpa Top 10%: 3.3 college gpa	Tuition (not fees) 8 semesters Top 10%: additional $2,000	http://www.osfa.mass.edu/pdfs/guidelines/2007-2008_Adams_Scholarship.pdf

	scored at least 'Proficient' on the other test. Additional waiver for students in top 10 percent.			Section 16 of chapter 15A of the General Laws (Section 31) http://www.mass.gov/bb/fy2005h1/outsec05/h31.htm
Michigan, Michigan Promise Scholarship	Score at Level 2 or above on the Michigan Merit Exam (MME) in reading, writing, math and science. Students who score in the 75th percentile on the ACT or SAT or achieve qualifying scores on the ACT Work Keys job skills assessment test also are eligible for the award.		One-time award of $4,000 for all students completing two years of college and earning a 2.5 college GPA, but $1,000 per year for first and second year is available to those who scored at Level 2 or higher on MME.	http://www.michigan.gov/documents/mistudentaid/FactSheetPromiseFY07_192865_7.pdf
Minnesota, Achieve Scholarship	1 of 4 criteria: A 'C' or better on one of two rigorous curricula options; a minimum score on 2 AP or IB courses; or complete 6 credit hours in a dual enrollment program.		$1,200 the first year with possibility of $600 for the second term.	http://www.getreadyforcollege.org/gPg.cfm?pageID=1789
Mississippi, Mississippi Eminent Scholars Grant (MESG)	3.5 high school GPA and a 29ACT	Maintain a 3.5 GPA in college	Award of $2,500 per year for a duration of 8 semesters.	http://parentsguide2college.connect-technology.net/search-results.php?article_id=228
Montana, Governor's Postsecondary Scholarship	3.0 high school GPA and 20ACT	Remain enrolled full-time and make satisfactory academic progress	$1,000/semester for 8 years	http://www.mgslp.state.mt.us/Content/Paying_For_College/Scholarships/Governor's_Postsecondary_Scholarship
Nevada, The Governor Guinn Millennium Scholarship	3.25 GPA and pass all parts of the Nevada High School Proficiency Examination. [The 2009 entering class will have to complete	2.6 college GPA during terms of freshman classification, then a 2.75 for each subsequent term at a	Award available for up to 6 years or $10,000, whichever comes first. Students receive $80 per credit hour at a university, $60 per	http://nevadatreasurer.gov/mshome.htm

(appendix table continued)			
	a 14 unit core curriculum.]	university or 6 credit hours at a community college.	credit hour at a state college, and $40 per credit hour at a community college.	http://nevadatreasurer.gov/documents/millennium/Doc-FactSheet.pdf
New Mexico, Legislative Lottery Scholarship	Diploma from a New Mexico high school or GED; Complete first semester of college (12 credit hours) with a 2.5 college GPA.	Remain enrolled full-time each semester and "maintain satisfactory academic progress"	100% of tuition for eight consecutive semesters.	http://hed.state.nm.us/content.asp?CustComKey=194795&CategoryKey=356518&pn=Page&DomName=hed.state.nm.us
Oklahoma, Oklahoma's Promise: Oklahoma Higher Learning Access Program	17 unit core curriculum (http://www.okhighered.org/okpromise/required-courses.shtml), 2.5 GPA on core and 2.5 overall GPA, Family income of less than $50,000 or approved amount; Must apply during 8th, 9th, or 10th grade	"Good academic standing" defined by Regents' policy (OSRHE Policy II-2-46.4), requiring a minimum 1.7 GPA during first 30 credit hours and a minimum 2.0 cumulative GPA after 30 credit hours. Full-time enrollment not required.	Tuition only for 5 years (including stop-outs), but no limit on credit hours	http://www.okhighered.org/okpromise/index2.shtml §62-41.29e. Oklahoma Student Aid Revolving Fund. http://www.okhighered.org/admin-fac/FinAidResources/okpromise.shtml
South Carolina, LIFE Scholarship	Earn a 3.0 GPA and score an 1100 SAT/24 ACT [Eligibility may also be earned by graduating in top 30% of class. Two of three requirements necessary for eligibility.]	Earn a 3.0 college GPA and complete at least 30 credit hours per year	Award renewable for four academic years. University students receive tuition up to $4,700 per academic year, and two-year college students receive tuition. All students receive a $300 book stipend.	http://www.che.sc.gov/New_Web/GoingToCollege/LIFE_Hm.htm
South Dakota, South Dakota Opportunity Scholarship	24ACT/1090SAT, no lower than a 'C' on any course in the 18.5 unit core curriculum, 3.0 high school GPA, and pass state proficiency exam	Maintain a 3.0 college GPA each semester, complete 15 credit hours per semester, and complete college proficiency exam.	$1,000/year for 3 years, then $2,000 for the fourth year	http://www.sdbor.edu/OpportunityScholarship/sdos.htm
Tennessee, Tennessee HOPE Scholarship	21ACT/980SAT and a 3.0 high school GPA (supplements available based on	Must have a cumulative GPA of 2.75 after 24 attempted hours	$1,000/year for 4 years until 120 credit hours are reached	http://www.collegepaystn.com/mon_college/sch_app_pdfs/

	higher performance).	and a 3.0 after 48, 72, 96 and 120 attempted hours		ScholarshipData2007.pdf
Texas, Towards Excellence, Access and Success (TEXAS) Grant Program	EFC less than $4,000 and complete a core curriculum (Recommended High School Program or Distinguished Advancement Program; http://www.collegefortexans.com/preparing/rhsp.cfm).	Satisfactory academic progress met during first year, then in subsequent years complete a minimum of 75% of hours attempted, earn a 2.5 GPA, and complete 24 hours/year.	Tuition and fees up to 150 semester credit hours or earned a bachelor's degree	http://www.collegefortexans.com/texasgrant/TEXASGrant.cfm
Utah, State Scholars Program [or Regents Scholarship]	'B' average on a 16.5 unit core curriculum [25ACT or 3.5 GPA eligible for alternate award of 75% of tuition for 2 years]		One-time award of $1,000	http://www.utahsbr.edu/acad01f.html#SSP http://www.utahsbr.edu/policy/r609.htm
Utah, New Century Scholarship	3.0 high school GPA, and: complete an associates (or approved equivalent), OR a science/math curriculum	3.0 college GPA each semester	75% of tuition	http://www.utahsbr.edu/acad01h.html
Virginia, Virginia Guaranteed Assistance Program	2.5 HSGPA and demonstrate need	Maintain full-time enrollment, 2.0 GPA	Tuition, fees and/or books based on need	http://www.schev.edu/students/factsheetVGAP.asp
West Virginia, Promise	'B' average on a 14 unit core curriculum; and a 22ACT (minimum 20 on each section) or 1020SAT (minimum of 490 critical reading and 480 math)	2.75 college GPA for first year and 3.0 every year after, and earn 30 credit hours per year	Tuition and fees for four years	http://www.promisescholarships.org/promise/information.aspx; http://www.promisescholarships.org/promise/high_school_students/eligibility_requirements.aspx
Wyoming, Hathaway Memorial Scholarship	2.5 high school GPA and 19ACT (supplements available for higher academic performance)	2.25 college GPA	$800/semester for 8 full-time semesters	http://www.uwyo.edu/hathaway/

Notes:

This notes section includes two lists, one for all manner of notes of interest on scholarship programs and a second for similar, but disqualified programs.

List 1: This list includes information about future, existing, or past programs; future changes in eligibility rules for some programs; alterations in state laws; and general information of interest:

- Arkansas: Voters approved a constitutional amendment on November 4, 2008, to create a lottery to fund scholarship programs. On March 26, 2009, the Arkansas legislature approved Act 606 revising the Academic Challenge Scholarship, renamed the Academic Challenge Scholarship Part 2, and dedicating the lottery proceeds to the scholarship.

- Arizona: The Arizona program was created and administered by the Board of Regents without mandate by the state legislature. This program is included because the scholarship is applicable to any university, making it portable like this compilation's definition mandates. In this instance, the author considers the Arizona Board of Regents to represent the state.

- Idaho: The Opportunity Scholarship Program is awarded to students who complete high school, and it is only an amount equivalent to tuition and fees less total aid. The program is considered a "last dollars mechanism" to help students meet cost. There are components of this program that makes it debatable for

inclusion. First, the criterion for inclusion on this listing does not require achievement above a high school diploma, though all other programs do. Second, a common characteristic of state-funded, merit-based aid is to incent student performance. The Opportunity Scholarship Program does not guarantee a scholarship, merely that a scholarship will be provided if necessary. The state's policy of balancing scholarship and aid does not preclude it from inclusion.

- Michigan: The Michigan Merit Scholarship was last awarded to the entering class of 2006. This program was replaced by Michigan Promise.

  http://www.michigan.gov/mistudentaid/0,1607,7-128-38193_39284---,00.html

- Oklahoma: In 2008, the Oklahoma Legislature delayed income and grade point average changes to Oklahoma's Promise program, pushing the requirement implementation back to 2010-2011 academic year (the Fall 2010 freshman cohort). When students apply in the early high school years, parental income can not exceed $50,000 per year and parental income can not exceed $100,000 by the time the student enters college. To maintain eligibility, students must earn a 2.0 college GPA through the sophomore year, then a 2.5 college GPA thereafter.

- South Dakota: The Opportunity Scholarship eligibility requirements will change in 2010 to include an enhance college preparatory curriculum called the "Distinguished Graduation Requirements."

  http://www.sdbor.edu/OpportunityScholarship/sdos.htm

List 2: This list includes state-funded scholarship programs meeting some, but not all, of the specified criteria:

- Alaska: The University of Alaska Scholars requires students to graduate in top 10% of class, making it ineligible for inclusion. http://www.alaska.edu/scholars/

- Arkansas: The Governor's Distinguished Scholarship in Arkansas is awarded to students earning a 32ACT/1410SAT and 3.5 high school GPA on the core curriculum. The program was disqualified from inclusion based on the possibility the program could be capped at 300 recipients. The maximum award is $10,000 per year. http://gs.adhe.edu/ScholarshipInfo.aspx

- Illinois: Illinois' Merit Recognition Scholarship does not qualify since students must rank in the top fifth percentile in either their class, on a standardized test (SAT or ACT), or the state exam. http://www.collegezone.com/studentzone/407_649.htm

- Kansas: The State Scholars program does not qualify because it uses an index to rank students, which is used to make the award. This compilation only includes programs where the eligibility criteria are static and not based on relative position to other students. http://www.kansasregents.org/financial_aid/state.html

- Maine: The Maine program was disqualified because the University of Maine program is funded by institutional funds, making them immobile. http://www.go.umaine.edu/scholarships.htm

- Maryland: The Maryland Distinguished Scholar Award was ineligible because an index score consisting of an SAT + the GPA on the first 5 semesters of high

school work. For the purpose of this compilation, the index constitutes a moving target. The Maryland program offers $3,000 per year for students who can maintain a 3.0 college grade point average.

http://www.mhec.state.md.us/financialAid/ProgramDescriptions/prog_ds.asp

- Michigan: The Kalamazoo Promise is a scholarship awarded to high school graduates of Kalamazoo Public Schools who attend a Michigan public university or community college, earn a 2.0 college grade point average, and complete 12 credit hours. The award amounts to the price of tuition, or a specified amount based on the number of years of attendance at a Kalamazoo Public School. This program was not included because it was not an award provided by the state.

  https://www.kalamazoopromise.com/?mode.page.view=27

- Missouri: The Missouri Higher Education Academic "Bright Flight" Scholarship Program requires students to score in the top 3 percentile of the ACT or SAT. The award is for $1,000 each semester for up to 10 semesters or attainment of a bachelor's degree. To maintain the scholarship, a student must earn a 2.5 GPA and have satisfactory academic progress. The entering cohort of 2010 will be eligible for a $1,500 per semester award.

  http://www.dhe.mo.gov/brightflight.shtml

- Rhode Island: Academic Promise Scholarship is awarded based on an index computed using standardized test score plus an adjusted financial need score. A 2.5 GPA is required for scholarship maintenance the first year, a 2.62 for the second year, and 2.75 for the third year. The scholarship is worth up to $2,500,

but there are a finite number scholarships.

http://www.riheaa.org/borrowers/scholarships/academic_promise.html

- New Jersey: New Jersey's Tuition Assistance Reward Scholarships requires students to graduate in the top 20% of their class.

    http://www.hesaa.org/index.php?page=nj-stars

- Washington: Washington discontinued its Promise program in 2006.

- Federal Government: The American Competitiveness Grant (ACG) is provided by the federal government to individuals who demonstrate need and complete their respective state's high school rigorous curriculum requirements. The ACG meets all of the stated criteria except the source of funding is not a state; it is the federal government. http://www.ed.gov/about/offices/list/ope/ac-smart.html

VITA

Jason James Droddy was born in Alexandria, Louisiana, in December, 1973, to Jackie and James Droddy. He grew up in Oakdale and Kinder, Louisiana, and graduated from Kinder High School in 1992. The same year, Mr. Droddy entered college at Louisiana State University (LSU). In 1993, he joined the Louisiana Army National Guard, and attended basic training at Fort Jackson, South Carolina. He was trained at Fort Sam Houston, Texas, as a combat medic. Mr. Droddy completed his undergraduate studies in 1996 earning a bachelor of arts degree in history. In January 1997, he began advanced studies at LSU's Public Administration Institute, earning a master's degree in 1998. Throughout his six years of study, Mr. Droddy worked at the LSU Office of Public Affairs.

Mr. Droddy began his professional career in the newly formed marketing bureau at the LSU Office of Public Affairs in January, 1999. He accepted a position at the Louisiana Sea Grant College Program as a tourism marketing research associate, and then left to serve as a coordinator of external affairs at the LSU Chancellor's Office. Chancellor Mark Emmert and director of external affairs Scott Woodward provided many opportunities to experience the university beyond the narrow scope of external affairs. Among the many assignments, the most notable was serving with the group that formulated the National Flagship Agenda, LSU's general seven-year improvement plan. Emmert later appointed Droddy as his executive assistant, where he served before being named to his current position, director of external affairs.

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It was during Mr. Droddy's time as a college student that he met his future wife, Annette Monique Bergeron of Goudeau, Louisiana. They were married in June 2000, and eight years later, had a son, Ryan Joseph Droddy. Mr. Droddy considers his family foremost among his many blessings. He is also grateful to the people of Louisiana for providing tuition exemption to members of the Louisiana Army National Guard and the people of the United States who made the G.I. Bill available. He is also thankful to Louisiana for providing a quality university in which to study. He hopes that he may return the state and nation's beneficence through public service.