

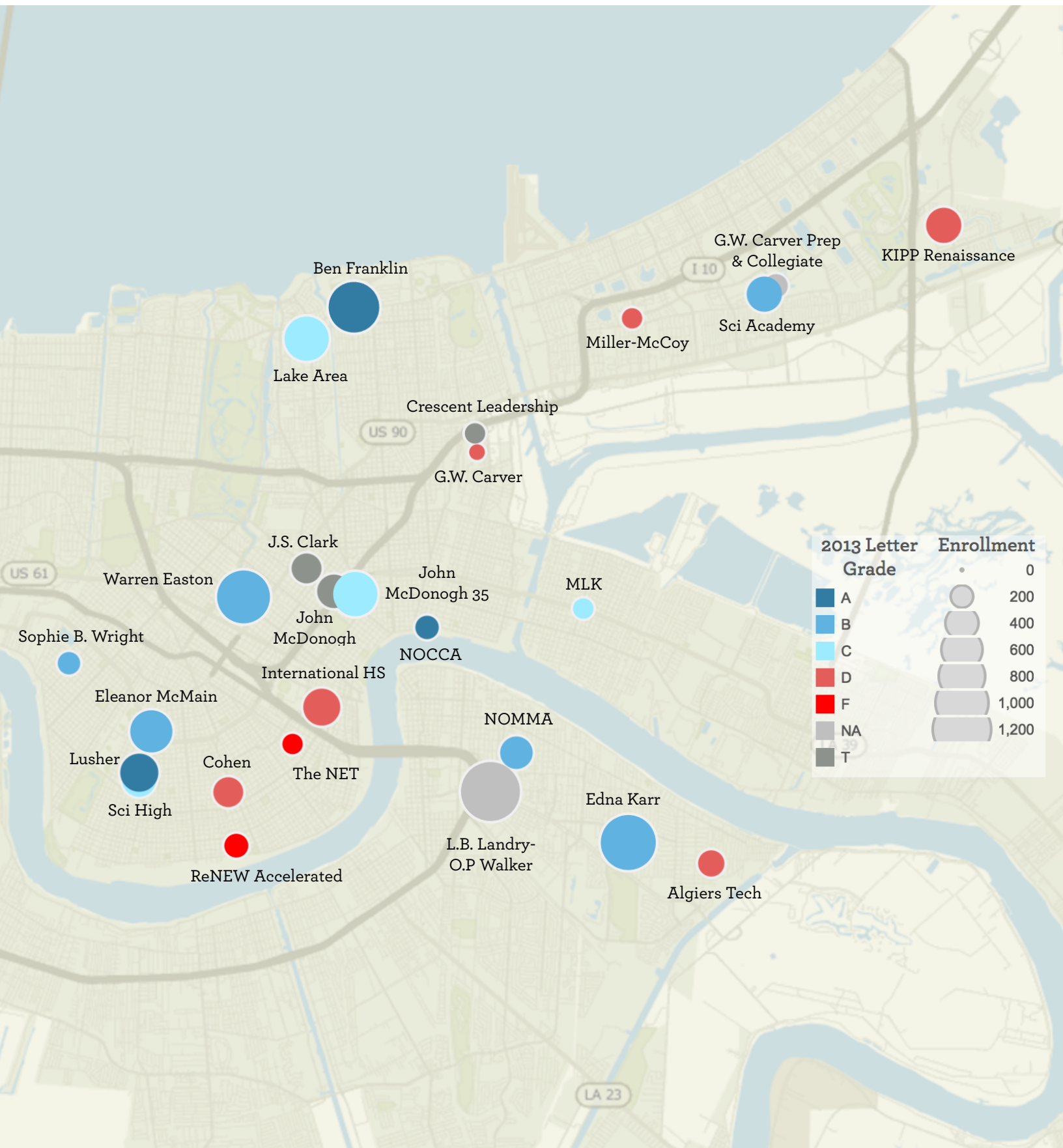


# Beating the Odds:

Academic Performance and  
Vulnerable Student Populations  
in New Orleans Public High Schools  
October 2014

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## Map of NOLA High Schools, 2013-14



## Table of Contents

4	Executive Summary
6	Introduction & Background
9	Academic Performance & Challenges
13	Analysis
15	School-Level Results
18	Key Findings & Conclusion
19	Appendices

### About the Cowen Institute

The Cowen Institute's mission is to advance the success of New Orleans children and young adults on their educational pathways through research, policy analysis, and programs that support youth. Launched in March 2007, the Cowen Institute chronicles education reforms in the city and assesses their impact on New Orleans youth and families. We promote practical application of the knowledge we gain and use research to both develop our own programs and to advance effective public policies. We seek to be responsive to the community and work in partnership with others to enhance the success of K-12 education and to strengthen career pathways for Opportunity Youth in New Orleans. Embedded in a great anchor institution, we leverage Tulane University resources to further this work.



# Executive Summary

**The changes to the landscape of high schools in New Orleans, beginning as a response to chronically failing schools, were catalyzed as a result of Hurricane Katrina. Prior to the storm, public schools in the city were generally failing their students. High schools had particularly low achievement levels.**

As schools were placed under the Recovery School District (RSD), the high school student population shifted from being almost entirely enrolled in Orleans Parish School Board (OPSB) schools to nearly half enrolled in RSD schools today. RSD has made additional changes to high schools in New Orleans through school closures and by allowing charter operators to takeover schools or build them grade by grade.

This report defines public high schools by characteristics associated with vulnerable students and examines the performance of high schools in New Orleans relative to their statewide peers. For this study, vulnerable students are defined as:

1. Over-Age for Grade Level: the percentage of students who are two years or more over-age at the beginning of grade 9.
2. Failed LEAP: the percentage of freshmen who failed their 8th grade state assessment (LEAP).
3. Free or Reduced-Price Lunch Eligibility (FRL): the percentage of students who are eligible for federally-subsidized lunch.
4. Special Education: the percentage of students who are eligible for special education services.

On some of these measures, public high schools in New Orleans and Louisiana look similar (over-age for grade level and failed LEAP). However, New Orleans has a significantly higher poverty rate and many high schools in New Orleans, particularly RSD schools, serve populations of vulnerable students at far higher rates than the state average.

Given these high rates of vulnerable students, many New Orleans public high schools face significant challenges. The analysis in this report confirms the average influence of vulnerable characteristics on school performance and identifies schools that are achieving at higher than expected levels given their student population.



## Key Findings

1. On average, characteristics of vulnerable students (i.e. over-age for grade level, failed LEAP, FRL-eligible, and special education) are associated with lower student achievement.  
Many students in New Orleans, especially in RSD high schools, are considered vulnerable. On average, these characteristics make the task of high schools more challenging. Schools with higher percentages of vulnerable students tend to have lower achievement levels.
2. Selective admissions policies tend to be associated with higher levels of student achievement.  
Holding constant the percentage of students that fall into these vulnerable categories, a school with selective admissions is still predicted to have higher EOC passage rates, score higher on the ACT Index, and report higher cohort graduation rates than schools with open admissions policies.
3. On key measures of student achievement (EOC, ACT, and cohort graduation rates), many public high schools in New Orleans with high proportions of vulnerable students are performing better than predicted given the vulnerable characteristics of their students.  
The majority of public high schools in New Orleans (60%) exceeded their predicted EOC passage rates. About half of New Orleans public high schools with available data had higher ACT Indices than predicted. All New Orleans high schools with available data were at or above their predicted cohort graduation rates.

This analysis identifies average relationships; it does not identify causation. While the analysis provides a useful means for identifying schools that are performing at or above their predicted levels given their vulnerable student population, it does not identify the causes behind a school's successes or shortcomings. Factors outside of the scope of this analysis are also responsible for driving performance. Further research should focus on uncovering the underlying causes that lead to better than predicted performance.

# Introduction & Background

## Introduction

On August 18, 2005, the school year began with 23 public high schools in New Orleans, which were under the Orleans Parish School Board (OPSB). Less than two weeks later, as a result of Hurricane Katrina and subsequent flooding, public schools in New Orleans were closed; many students and families evacuated the city. Hurricane Katrina catalyzed the state's seizure of persistently low-performing schools and marked the beginning of a changing public high school landscape in New Orleans, which has led to vastly improved academic results for most high schools.

## High Schools after Hurricane Katrina

Following Hurricane Katrina, OPSB retained governance of 17 of the 120-plus public schools in the city that were performing above the state average. The majority of public schools were placed under the Recovery School District (RSD), a state entity created in 2003 to takeover chronically failing schools across the state. During the first full school year following the storm (2006-07), public schools re-opened under OPSB and RSD. The state Board of Elementary and Secondary Education (BESE) re-opened two charter elementary schools in New Orleans that enrolled students from across the state.

*In the 2013-14 school year, 30 public schools serving high school grades were operating in New Orleans, serving over 12,000 students.*

As families returned to the city for the 2006-07 school year, schools re-opened to accommodate the demand. In October 2006, 16 public schools had students in high school grades. OPSB had oversight of nine schools, three direct-run schools<sup>a</sup> and six charter schools, serving a total of 4,169 high school students. RSD had responsibility for chronically failing schools and re-opened seven high schools, five direct-run schools and two charter schools<sup>b</sup>, serving a total of 4,411 students in grades 9 through 12.

RSD re-opened high schools as direct-run schools with the intention of closing and replacing them with high-quality charter school operators. As the low-performing high schools “phased out” by not enrolling additional students, new charter high schools were opened, often beginning with grade 9 and adding a grade at a time. At the end of the 2013-14 school year, RSD closed its remaining three direct-run high schools and many of the new charter schools graduated their first cohort.

The portfolio of high schools under OPSB has changed very little since the first full school year after Hurricane Katrina (2006-07). Until 2011, OPSB was unable to charter additional schools. Since then, although they have authorized several new charter elementary schools, they have not added any charter high schools to their portfolio of schools.

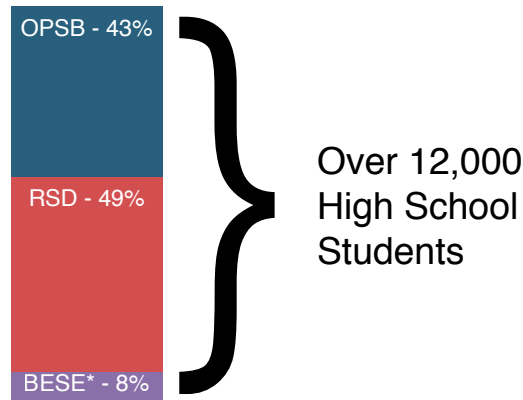
In the 2013-14 school year, 30 public schools serving high school grades were operating in New Orleans, serving over 12,000 students.

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<sup>a</sup>Includes the Orleans Parish PM School

<sup>b</sup>Includes P.A. Capdau which expanded to serve high school grades

Figure 1: High School Enrollment in New Orleans 2013-14



\*Includes New Orleans Center for Creative Arts

High school reform in New Orleans

Across the country, high dropout rates and low academic achievement among high school students have placed high school reform on the top of the national education policy agenda. The failure of high schools to adequately prepare students for college and careers is a problem that disproportionately impacts the most vulnerable students. Stimulating change in already stressed and fragile school environments continues to be one of the most difficult tasks facing district and school leaders across the country.

Research has identified major challenges associated with low-performing high schools; these include: 1) creating an orderly and personalized learning environment 2) helping students who enter high school with poor academic skills 3) improving school-wide instructional content and practice and 4) preparing students for the world beyond high school.<sup>1</sup>

High school transformation was an articulated priority in New Orleans even before Hurricane Katrina. Former OPSB superintendent, Anthony Amato, focused on improving high school outcomes by creating Signature High School Centers, career-themed high school programs. Amato’s resignation, Hurricane Katrina, and the state takeover of schools brought an end to the career academies.<sup>2</sup>

Following Katrina, former RSD superintendent, Paul Vallas, with funding from the Walton Family Foundation, set out to redesign RSD’s direct-run high schools. Vallas’ efforts focused on turning around six failing high schools by providing a college-prep curriculum and at least one career-focused program at each school. Within two years, and after little improvement, RSD abandoned its redesign efforts and redirected efforts to opening new high schools, replicating

Public Schools Serving Grades 9-12 in 2013-14

OPSB Direct-Run Schools

- Eleanor McMain Secondary School (grades 7-12)
- McDonogh #35 College Prep (grades 9-12)

OPSB Charter Schools

- Benjamin Franklin High (9-12)
- Edna Karr High (9-12)
- Lusher Charter School (K-12)
- New Orleans Science and Math High (9-12)
- Warren Easton Senior High (9-12)

RSD Direct-Run Schools

- G.W. Carver High (11-12)\*
- Sarah T. Reed High (11-12)\*
- Walter L. Cohen Senior High (12)\*

RSD Charter Schools

- Algiers Technology Academy (9-12)
- Cohen College Prep (6-12)
- Crescent Leadership Academy (8-12)
- G. W. Carver Collegiate Academy (9-10)
- G.W. Carver Prep Academy (9-10)
- John McDonogh High (9-12)
- Joseph S. Clark High (9-12)
- KIPP Renaissance (9-12)
- Lake Area New Tech Early College High (9-12)
- L.B. Landry - O.P. Walker High (9-12)
- Dr. Martin Luther King Charter High School for Science, Math, and Technology (K-12)
- Miller McCoy Academy (6-12)
- ReNEW Accelerated #1 (9-12)
- ReNEW Accelerated #2 (9-12)
- Sci Academy (9-12)
- Sophie B. Wright Charter (6-12)
- The NET Charter (9-12)

BESE Charter Schools

- International High School (9-12)
- New Orleans Military and Maritime Academy (9-11)

Independent State School

- New Orleans Center for Creative Arts

\*Closed for the 2014-15 school year.



higher performing models, selecting higher performing elementary schools to expand to serve high school grades, and closing poor performing schools.<sup>3</sup>

In 2013, RSD announced the closure of its three remaining direct-run high schools and RSD Superintendent Patrick Dobard has continued the strategy of empowering high-performing charter operators to transform low-performing schools. In addition, RSD intends to enhance their high school portfolio by recruiting charter school operators who target the students most at risk of dropping out. Through participation in Louisiana's JumpStart program, RSD is seeking to expand its career and technical education options. By improving the quality of the elementary and middle schools, students should begin high school ready to succeed.<sup>4</sup>

#### Specialized HS Programs in New Orleans

- Bard Early College
- International High School
  - French
  - Spanish
  - International Baccalaureate
- Joseph S. Clark HS
  - NOLA Career and Technical Academy
- McDonogh 35 STEM Magnet Academy
- New Orleans Center for Creative Arts
  - Academic Studio
- The New Orleans Charter Science and Mathematics High School (Sci High)
- New Orleans Military and Maritime Academy
- Alternative High Schools
  - The NET
  - ReNEW Accelerated
  - Crescent Leadership Academy

# Academic Performance & Challenges

## Academic Performance in New Orleans

Public schools in Louisiana have historically failed to keep up with their peers nationwide. In 2013, Louisiana ranked near the bottom among U.S. states in both reading and math performance for 8th graders, which has been true going as far back as 1998 (see Table 1).<sup>5</sup>

While Louisiana has lagged behind most other states, New Orleans has consistently achieved below the state average. The gap between student performance in New Orleans and Louisiana was large in the years preceding Hurricane Katrina, ranging from 22 to 27 percentage points between 1999 and 2005. During that period, Louisiana's students passed their standardized tests at nearly twice the rate of New Orleans students, with the gap slightly narrowed by 2005.

Public school students in grades 3 through 8 are required to take LEAP and iLEAP exams in English Language Arts (ELA), math, science, and social studies. For grades 4 and 8, the exams are considered “high stakes” and students must meet a minimum performance score to advance to the next grades. High school students used to be required to pass the Graduation Exit Exam (GEE) in order to graduate with a diploma. Beginning with the 2009 9th grade cohort, high school students are required to pass End of Course (EOC) exams after completing algebra, geometry, English II and III, biology, and U.S. history.

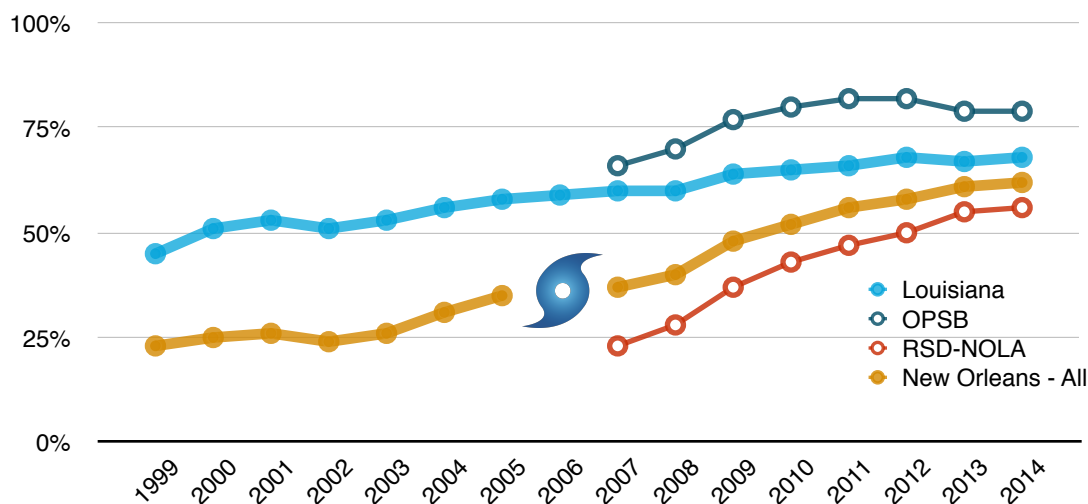
Since 2005, public schools in New Orleans, have dramatically improved their performance relative to the state. In 2014, the achievement gap narrowed to only six percentage points. Sixty-two percent of public school students in the city passed their exams in 2014, compared to only 23 percent in 1999.

Table 1: NAEP State Rankings 2013, Grade 8

Reading	Math
1. Massachusetts	1. Massachusetts
2. New Jersey	2. New Jersey
3. Connecticut	3. New Hampshire
⋮	⋮
<b>48. Louisiana</b>	<b>48. Louisiana</b>
49. New Mexico	49. Mississippi
50. Mississippi	50. Alabama
51. District of Columbia	51. District of Columbia

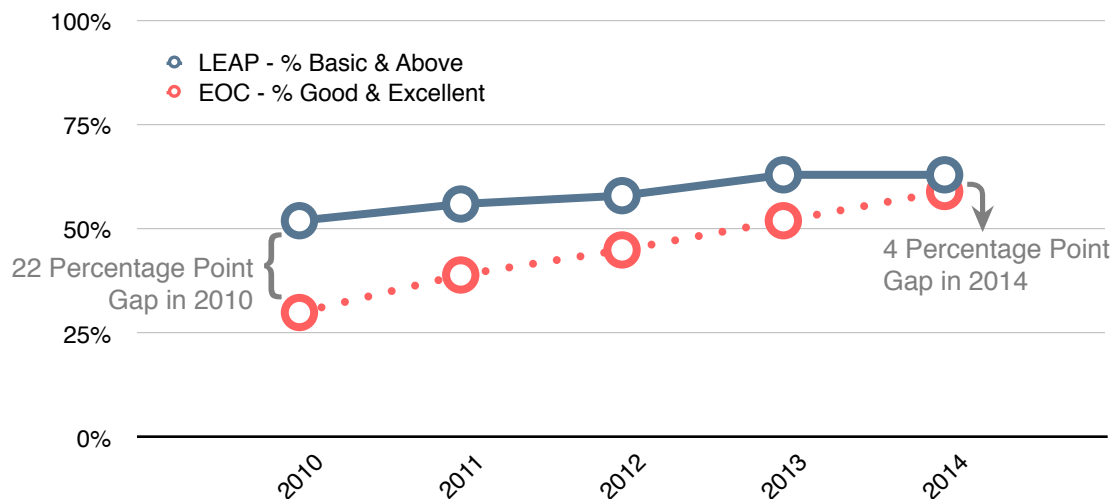
Source: National Center for Education Statistics

Figure 2: Comparison of Average Percent of Students Scoring at Basic and Above Combining Scores on All Subjects of LEAP, GEE/EOC, and iLEAP for All Grades



Between 2010 and 2013, compared to public high school performance, public elementary schools in New Orleans reported higher average passage rates on state assessments, as illustrated in Figure 2. In 2010, 52 percent of New Orleans' 4th and 8th graders passed the LEAP test and only 30 percent of high schoolers passed their End-of-Course tests, a 22 percentage point gap. However, since that time, overall high school performance has improved and the difference in passage rates\* narrowed to only four percentage points in 2014.

**Figure 2: Percentage of Students in New Orleans Passing LEAP (4th & 8th grades) and EOC (High School), 2010-2014**



End of Course tests were first introduced in the 2008-09 school year. Subjects were phased in as follows:

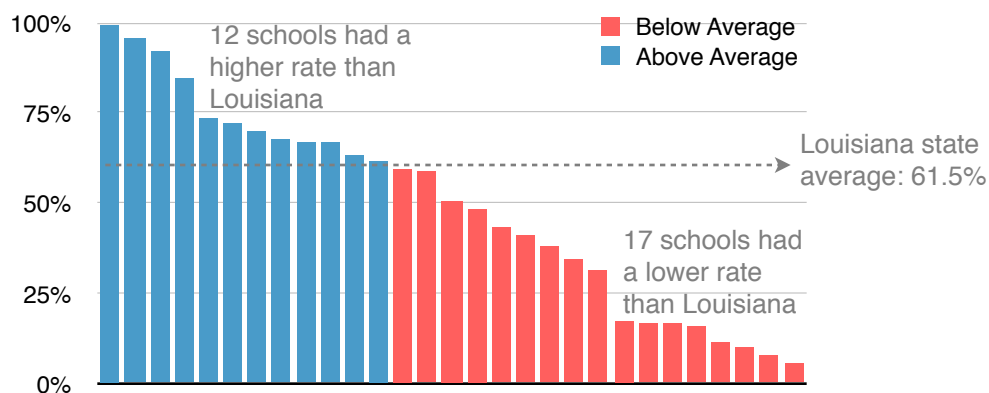
School Year	Subject
2008-09	Algebra I English II
2009-10	Geometry
2010-11	Biology
2011-12	English III
2012-13	U.S. History

The 2012-13 school year was the first year that all subjects were administered.

High school performance in New Orleans has also grown closer to the state average performance. In 2013-14, 62 percent of Louisiana's public high school students scored Good or Excellent on their EOC exams. In New Orleans, 59 percent of students passed their EOC, an increase of 29 percentage points since 2010.

While the average achievement of New Orleans high schools is now close to the state average, 12 schools performed above the state average on EOC tests in 2013-14, compared to 17 schools that were below the state average.

**Figure 3: Percentage of Students in New Orleans High Schools Scoring Good or Excellent on EOC, 2013-14**



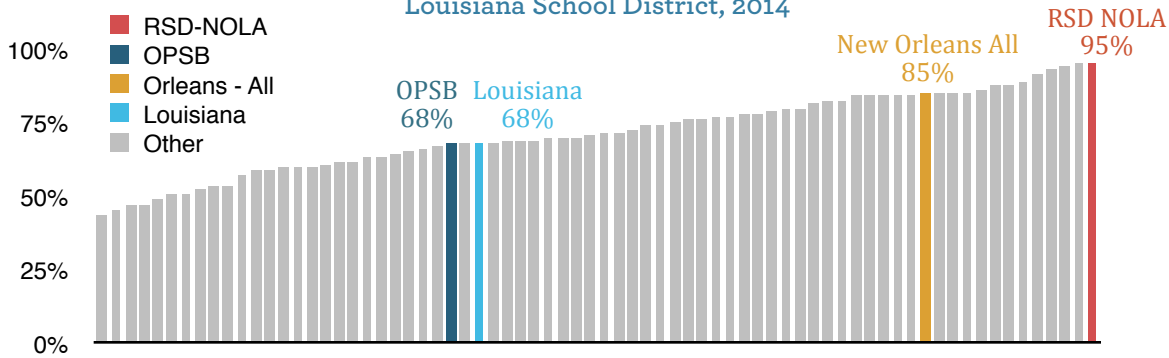
\*Includes all EOC subject tests given each year.



## Academic Performance and Poverty

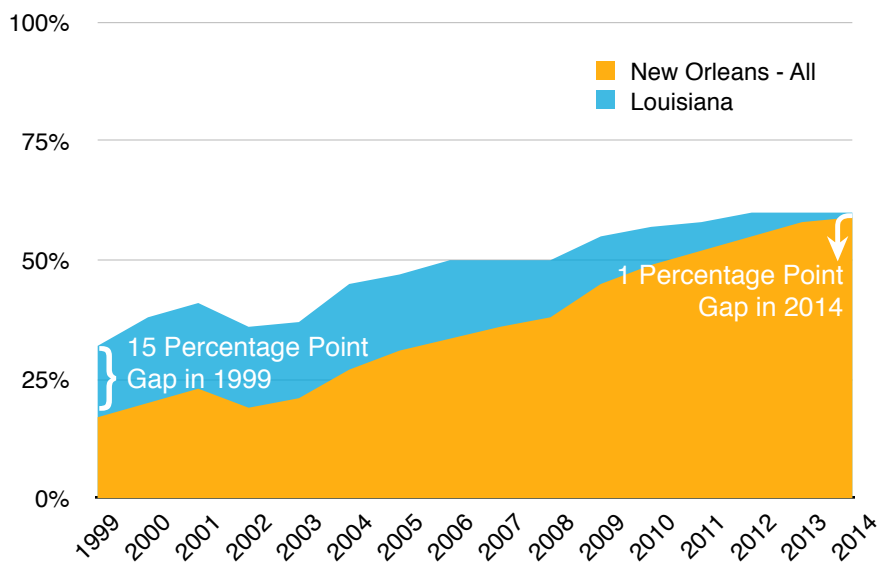
Louisiana public schools have one of the highest rates of poverty in the nation. In the 2010-11 school year, 66 percent of Louisiana public school students were eligible for free or reduced-price lunch (FRL), the fourth-highest rate in the country.<sup>6</sup> New Orleans public schools have a significantly higher rate of poverty (85 percent in 2014), though the students are not distributed evenly across schools. New Orleans public schools under RSD have a rate of 95 percent compared to 68 percent for public schools under OPSB.

Figure 4: Percentage of Students Eligible for Free & Reduced-Price Lunch, by Louisiana School District, 2014



The academic performance of FRL-eligible students in New Orleans has trailed behind the performance of all FRL-eligible students in Louisiana. In 1999, only 17 percent of New Orleans' FRL-eligible students passed their standardized tests, compared to 32 percent of Louisiana's FRL-eligible students. In 2014, however, that gap was reduced to only 1 percentage point with a 59 percent passage rate.

Figure 5: Comparison of Average Percent of FRL-Eligible Students Scoring at Basic and Above on LEAP, GEE/EOC, and iLEAP



## Unique Challenges Facing High Schools

While all schools may face the challenge of educating students that are under-prepared academically, high schools can face especially great challenges. By the time students enter high school, they have already received nine years of schooling. A student's academic preparedness upon entering the 9th grade can make a high school's task easier or more difficult. Students who begin high school over-age for grade level, or who failed LEAP in 8th grade, tend to begin high school at lower achievement levels than their peers.

Students may become over-age for their grade level for a variety of reasons, including periods of disconnection from school, inadequate academic supports, or traumatic events in the student's personal life. In 2014, 12 percent of 9th graders in both New Orleans and Louisiana started high school at least two years older than their peers. RSD schools, however, had a significantly higher rate, with 20 percent of freshmen being over-age.

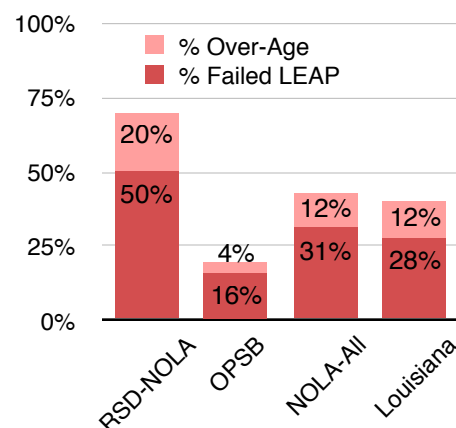
The percentage of 9th graders who failed LEAP in English or math in 8th grade was also similar in both New Orleans and Louisiana. Again, RSD schools had a much higher rate (50%) than the state (28%) or OPSB (16%).

## High School Accountability

Each year, despite the challenges they face and the population of students they serve, all public schools in Louisiana are graded (A-F scale) based on their School Performance Score (SPS). The high school SPS is calculated on a 150-point scale and based on four criteria: ACT, EOC, quality of diploma, and graduation index. Schools only earn points if a student receives a composite score of 18 or higher (out of 36) on the ACT and if a student scores "Good" or "Excellent" on the EOC. The "quality of diploma" factors in the type of degree a student earns, if they completed on time, and if they earned advanced credits. Finally, schools are rewarded based on the percentage of students who graduate in four years.

The SPS measures absolute performance levels and does not evaluate academic growth for all students. Because of the challenges associated with vulnerable students, it can be especially difficult for high schools with high percentages of vulnerable student to perform well on the state's accountability system. Schools that serve the most vulnerable youth may not be given "credit" for the gains their students have made if they started at relatively low levels.

**Figure 6: Percentage of Grade 9 Students, 2014**



*See Appendix B for a detailed distribution of vulnerable characteristics across New Orleans schools.*



## HIGH SCHOOL SPS FORMULA (9-12)

25% Composite ACT  
25% End of Course Tests  
25% Graduation Rate  
25% Quality of Diploma

**Table 2: Average High School Performance**

	Louisiana	NOLA - All	OPSB	RSD-NOLA
EOC - % Good or Excellent (2014)	61.5%	51.8%	70.6%	47.2%
ACT - % Scoring 18 or Higher (2014)	67%	56%	74%	38%
Cohort Grad. Rate (2013)	73.5%	72.8	89.3	59.5
Average HS SPS (2013)*	76	67	98	50
College Matriculation (2013)**	56%	58%	71%	44%

\*Includes Combination Schools

\*\*Includes enrollment in 2- and 4-year colleges. This measure does not count towards a school's SPS.

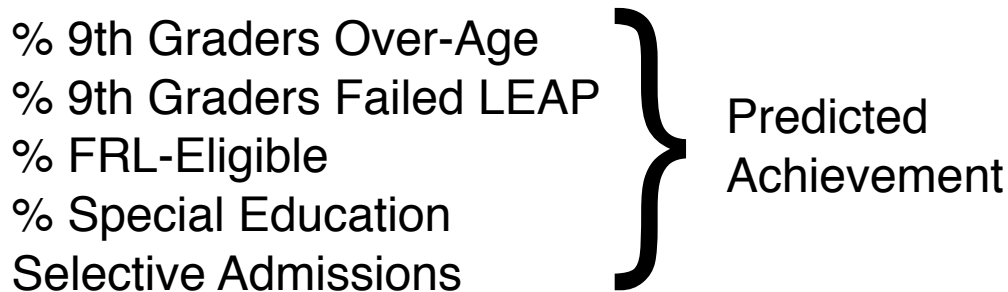
# Analysis

In an effort to provide a more accurate assessment of public high schools in New Orleans, this analysis evaluates how well schools are performing, given the challenges they face with their student bodies.

The three outcome measures used are three of the key measures included in SPS:

- **End of Course Passage Rates:** tests that measure whether students are proficient in core subject areas according to Louisiana standards.
- **ACT Index:** a required college admission exam. Strong performance on the exam is an indicator of college preparedness.
- **Cohort Graduation Rate:** a measure of the percentage of students graduate high school in four years.

This analysis predicts a school's performance based on the following criteria<sup>a</sup>:



Using data from all of Louisiana's high schools, the analysis estimates the average relationship between each of these characteristics and school performance. For example, the analysis identifies whether having a higher percentage of freshmen who are at least two years above grade level tends to be associated with higher or lower school performance.

Based on the estimated relationships, a predicted value is calculated. The predicted value estimates what a school could be expected to score based on the characteristics of its student body. After a predicted value is calculated, it is compared to its actual score to determine how the school has performed relative to its predicted performance. Schools can then be categorized as follows:

- ▲ Performed better than predicted given its student body.
- Achieved about as well as predicted given its student body.
- ▼ Performed below predicted given its student body.

See Appendix C for more details about the methodology.

*The predicted value estimates what a school could be expected to score based on the characteristics of its student body. After a predicted value is calculated, it is compared to its actual score to determine how the school has performed relative to its predicted performance.*

<sup>a</sup>See "The Use of Ninth-Grade Early Warning Indicators to Improve Chicago Schools" by the University of Chicago Consortium on School Research for more information on some of the factors that lead to low academic achievement and high school disconnection.



## Results

Based on the analysis, each of the variables, except for selective admissions, tends to be associated with lower levels of student achievement. That means, for example, that an increase in a high school's percentage of over-aged freshmen is associated with a decrease in overall achievement.

The only variable with a positive relationship was selective admissions. Having selective admissions criteria leads to higher predicted academic achievement.

**Table 3: Variable Relationships**

On average, as each of the following increases...	Student Achievement...
% 9th Graders Over-Age	Decreases
% 9th Graders Failed LEAP	Decreases
% FRL	Decreases
% Special Education	Decreases
Selective Admissions	Increases

While these relationships are true on average, some schools have performed better than predicted, while others have performed at a lower level than predicted. The graphs on the following pages illustrate how schools in New Orleans and across the state performed relative to their predicted values on EOC tests, the ACT, and cohort graduation rates.

For detailed results from the analyses, see Appendix C.

### What is Measured Matters

When evaluating school performance, what is measured and how it is measured can make a significant difference in a school's rating. For example:

- Suppose there are two students who enter two schools at the lowest achievement level ("Needs Improvement"). One school helps their student progress to "Fair," while the other student makes no progress. Currently, schools only get credit if a student achieves "Good" or "Excellent," so neither school gets credit. If evaluation had been based on student growth, the first school would have been rewarded for improving its student's performance. To partially account for this, schools can receive up to 10 bonus points for improving the performance of the lowest-achieving students on the ACT testing series.
- When analyzing the EOC, one could use either the EOC Index, which is created for calculating the SPS, or the percentage of students at "Good" or "Excellent." The Index assigns more value for students who achieve "Excellent" than for those who achieve "Good." One measure only takes into account if students achieve better than "Fair," while the other gives more credit for achieving the highest level. Each of these create different incentives for schools.

<sup>a</sup>Special admissions schools are schools that are defined by the LDOE as magnet schools and may have academic requirements for admission.

Figure 7: Actual vs. Predicted % Good & Excellent on EOC, by School 2013-14

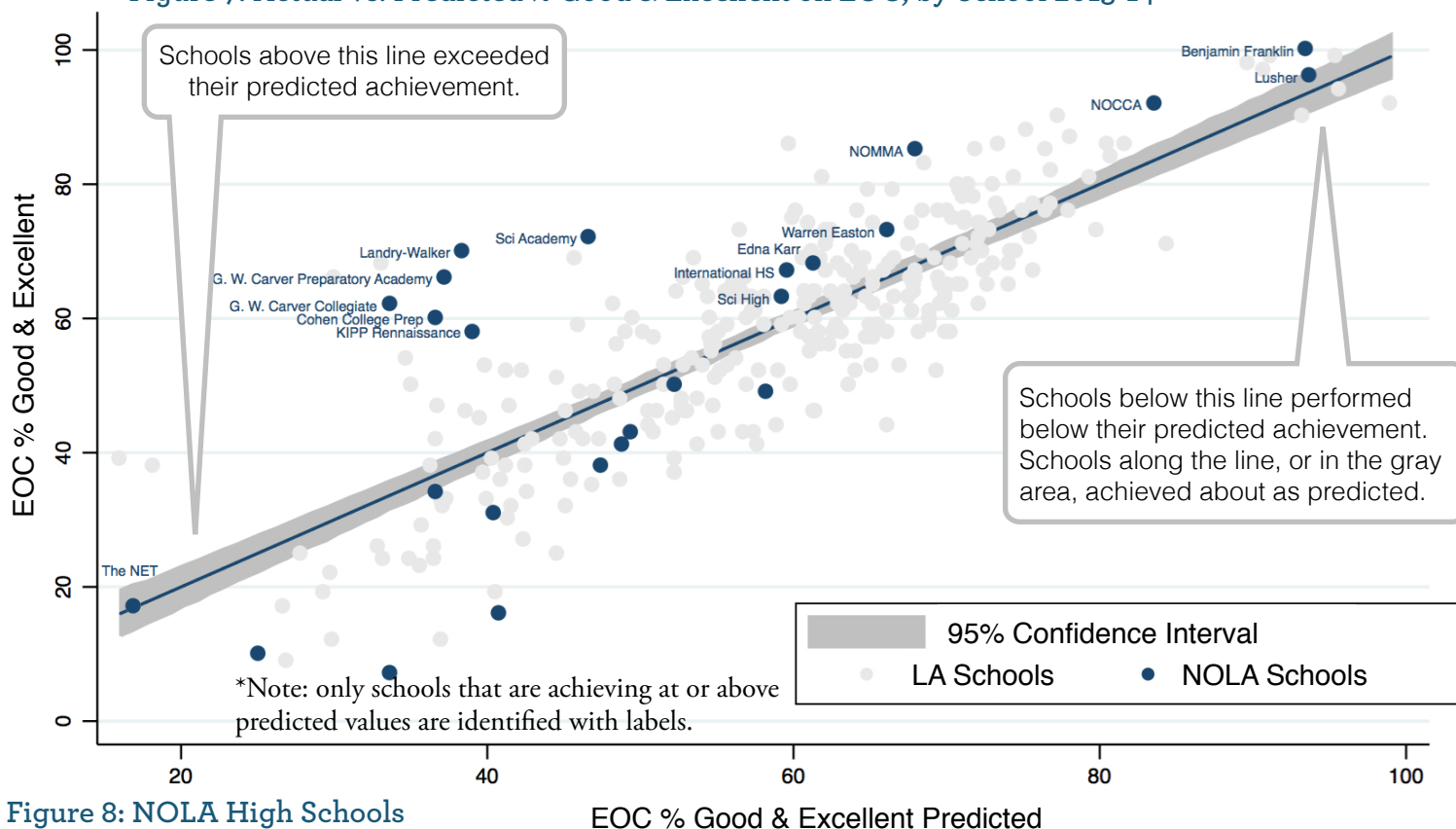
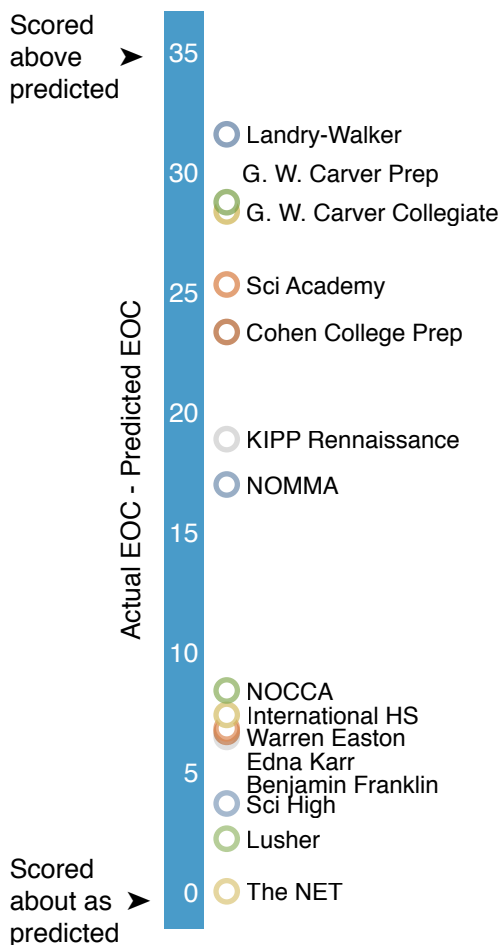


Figure 8: NOLA High Schools at or above Predicted Levels



### End of Course Tests

The majority of high schools in New Orleans (60%) exceeded or met their predicted values on the EOC. This means that the school had a higher percentage of students pass their EOC tests, or score “good” or “excellent,” than predicted given their student body. On average, high schools in New Orleans had about four percentage points more students passing their EOC tests than predicted.

Figure 8 to the left shows the schools that scored higher than predicted given their student population and by how many percentage points they were above predicted.

Cumulative EOC passage rates were not available for ReNEW Accelerated #1 & #2 in the 2013-14 school year.

High schools in Louisiana are assessed based on the percentage of students that score “good” or “excellent” on their EOC tests and receive no credit for students who score lower than that level. The EOC is taken only in the following subjects: Algebra I, Geometry, English II and III, Biology and U.S. History.

Figure 9: Actual vs. Predicted ACT Index Score, by School 2013

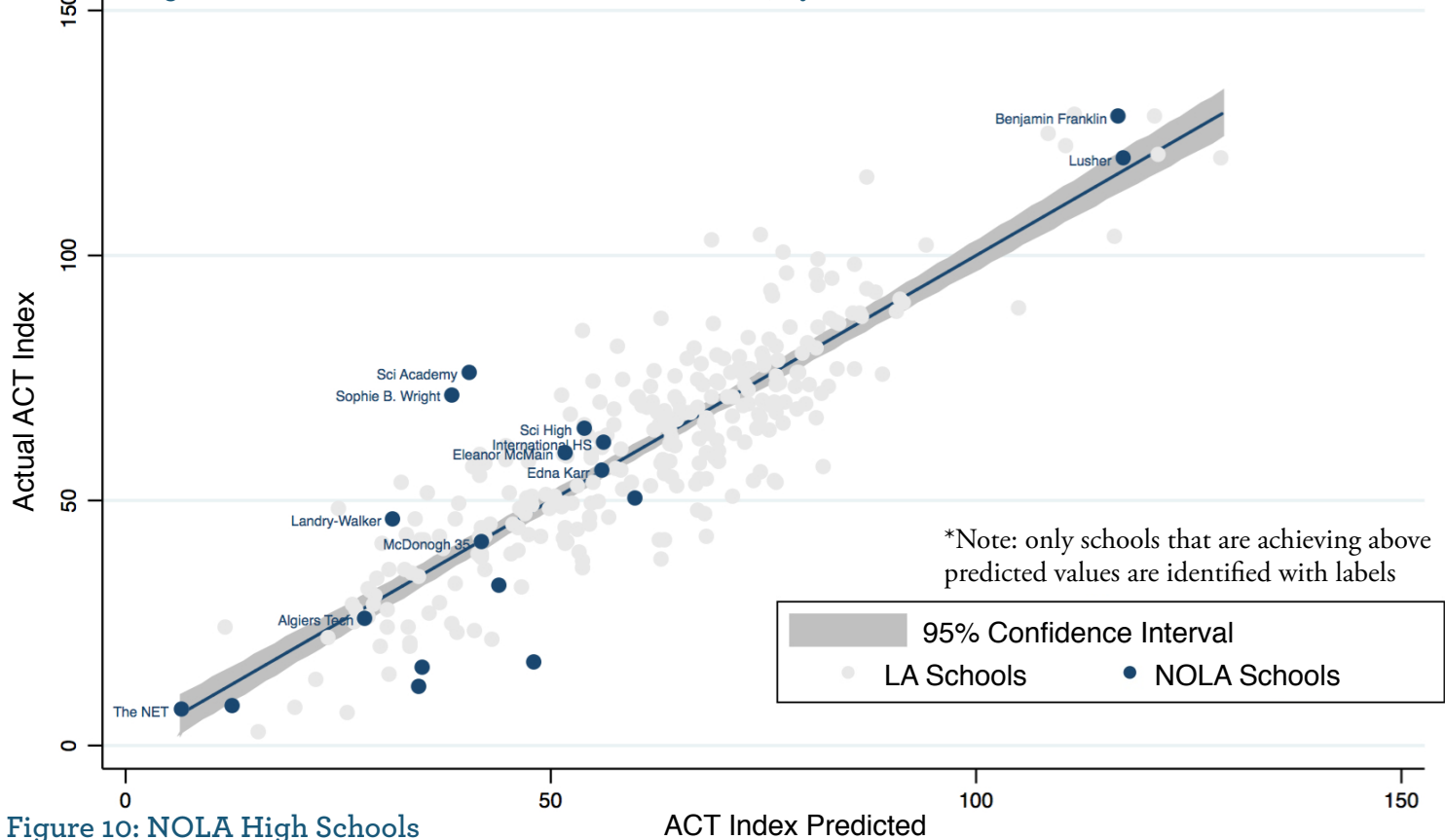
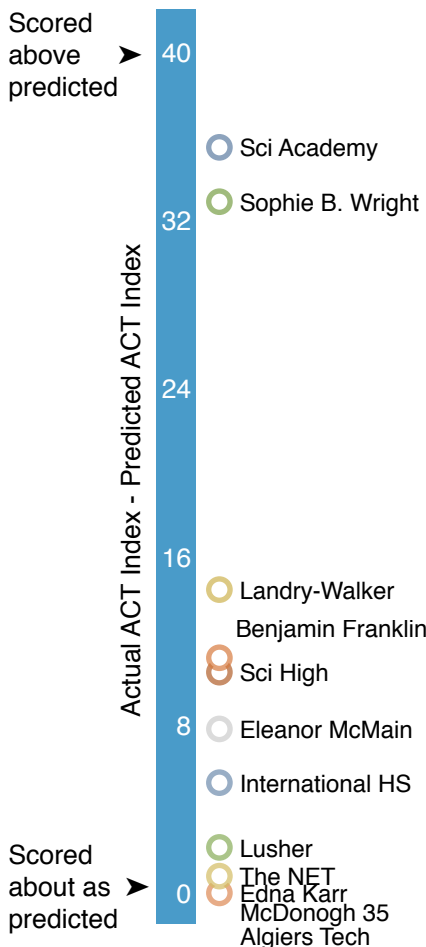


Figure 10: NOLA High Schools at or above Predicted Levels



### ACT Performance

Only 18 schools in New Orleans received an ACT Index in the 2012-13 school year. Of those, 67 percent of schools achieved at or above their predicted levels. Figure 10, to the left, shows which schools outperformed expectations and by how many points on the ACT Index.

An ACT Index score was not available for the following schools in the 2012-13 school year: Crescent Leadership Academy, Cohen College Prep, G.W. Carver Prep, G.W. Carver Collegiate, KIPP Renaissance, New Orleans Military/Maritime Academy, New Orleans Center for Creative Arts, and ReNEW Accelerated #1 and #2.

The ACT is required for all high school students in Louisiana and a quarter of a school's SPS is based on its students performance on the test. The ACT is scored on a 36-point scale and schools only receive points on their SPS if a student scores at least 18. Each point above 18 increases the school's SPS. Schools are scored based on an ACT Index, which is calculated on a 150 point scale.



## 2012 Cohort Graduation Rates

Figure 11: Actual vs. Predicted Cohort Graduation Rate, by School 2012

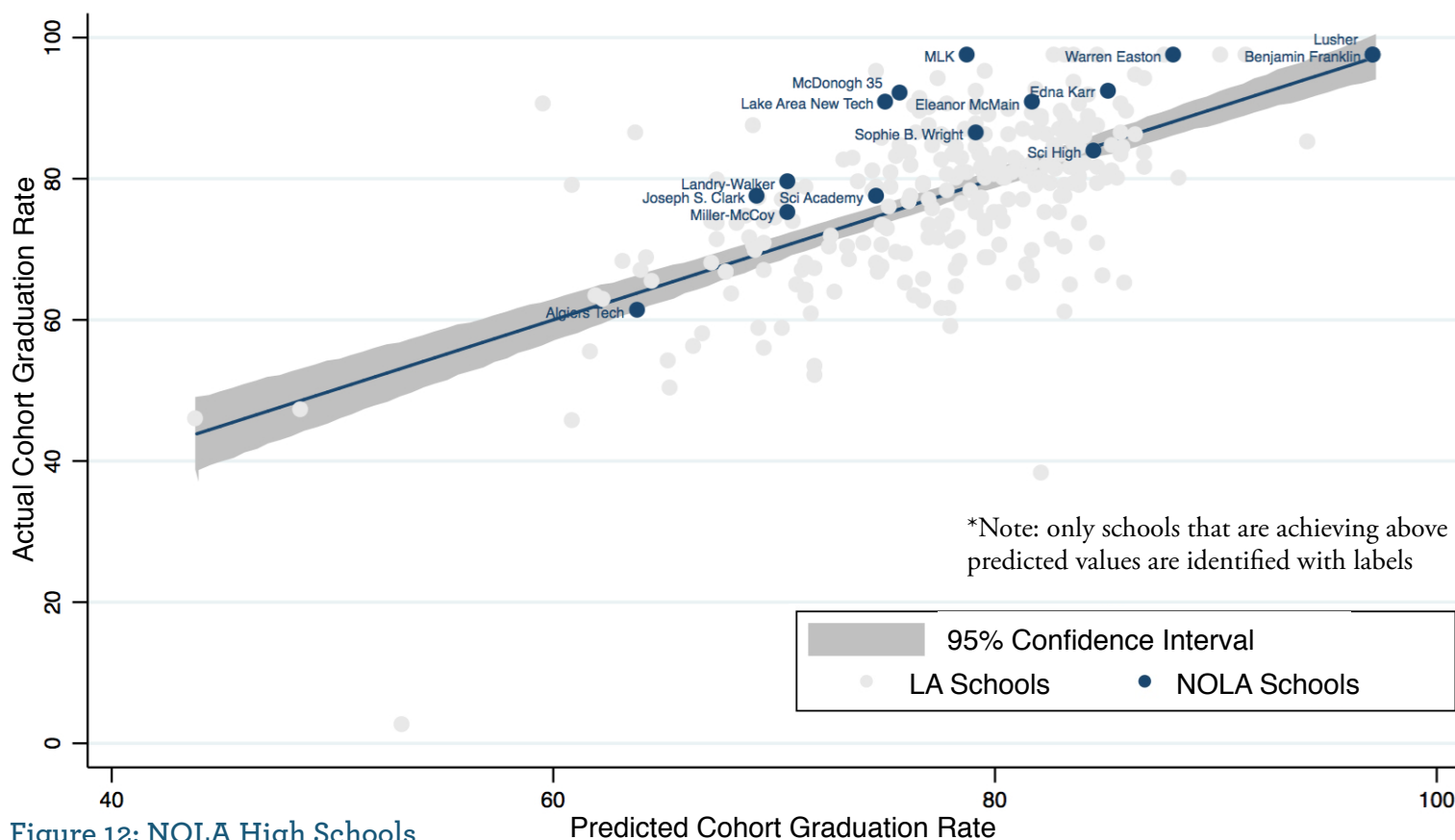
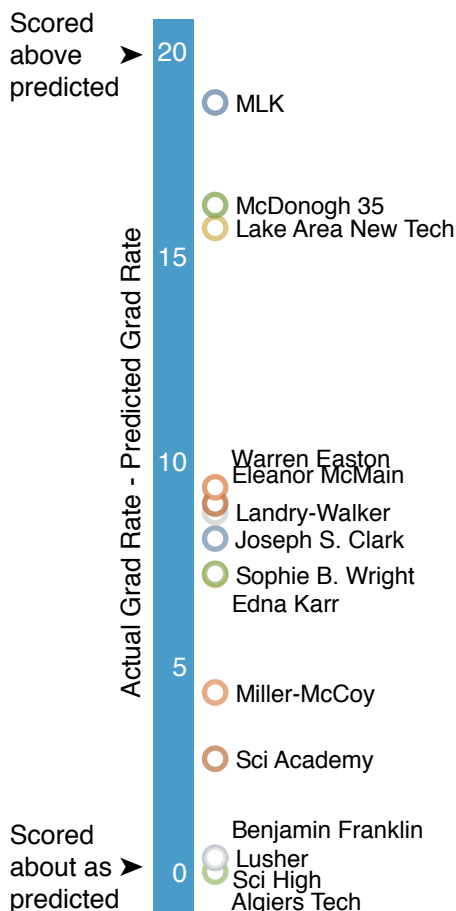


Figure 12: NOLA High Schools at or above Predicted Levels



### Cohort Graduation Rates

Of the 15 high schools with reported cohort graduation rates in 2011-12, 11 had rates that exceeded their predictions. The remaining four schools performed about as predicted.

On average, cohort graduation rates in New Orleans were about seven percentage points higher than predicted. Both Benjamin Franklin and Lusher could not have achieved above predicted since both their predicted and actual graduation rates were near 100 percent.

A cohort graduation rate was not available for the following schools in the 2012-13 school year: Crescent Leadership Academy, Cohen College Prep, G.W. Carver Prep, G.W. Carver Collegiate, International High School, John McDonogh, KIPP Renaissance, the NET, New Orleans Military/Maritime Academy, New Orleans Center for Creative Arts, and ReNEW Accelerated #1 and #2.

Cohort graduation rates measure the percentage of students who graduate within four years. By this measure, schools in New Orleans consistently exceeded predictions. Students who need an extra semester to complete high school, students who earn a GED, and students who earn a special education certificate are not counted as having graduated in the cohort graduation rate.

# Key Findings & Conclusion

## Key Findings

1. On average, a high school with a high percentage of students who fall into the vulnerable category (i.e. over-age for grade level, failed LEAP in 8th grade, FRL-eligible, and special education), is associated with lower student achievement.
2. Holding constant the percentage of students that fall into these vulnerable categories, a school with selective admissions is still predicted to have higher EOC passage rates, score higher on the ACT Index, and report higher cohort graduation rates than schools with open admissions policies.
3. On key measures of student achievement (EOC, ACT, and cohort graduation rates), many high schools with high proportions of vulnerable students are performing better than predicted in New Orleans. In particular, all schools with available data in New Orleans had cohort graduation rates that were at or above their predicted levels.

## Conclusion

Many high schools face unique challenges. It is important that schools are evaluated based on fair measures that take into account their student populations and that schools are recognized appropriately when they achieve at higher levels than predicted, given their populations.

This study confirmed that characteristics that define vulnerable student populations such as over-age for grade level, failed LEAP, free and reduced-price lunch eligibility, and special education can have a negative relationship with school performance. On average, schools that serve a population with high rates of vulnerable students are not predicted to perform as well as schools with no vulnerable students on an absolute level. But schools can, and many do, overcome these challenges.

These findings show that all schools have the capacity to improve their students' academic achievement; many schools were able to beat the odds and excelled despite having higher rates of vulnerable students.

But the burden of improved performance doesn't fall on high schools alone. This analysis also highlights the importance of strong K-8 education in developing students ready for post-secondary success. Too many students enter high school behind academically and over-age for their grade level, which places too much of the burden to achieve on high schools.

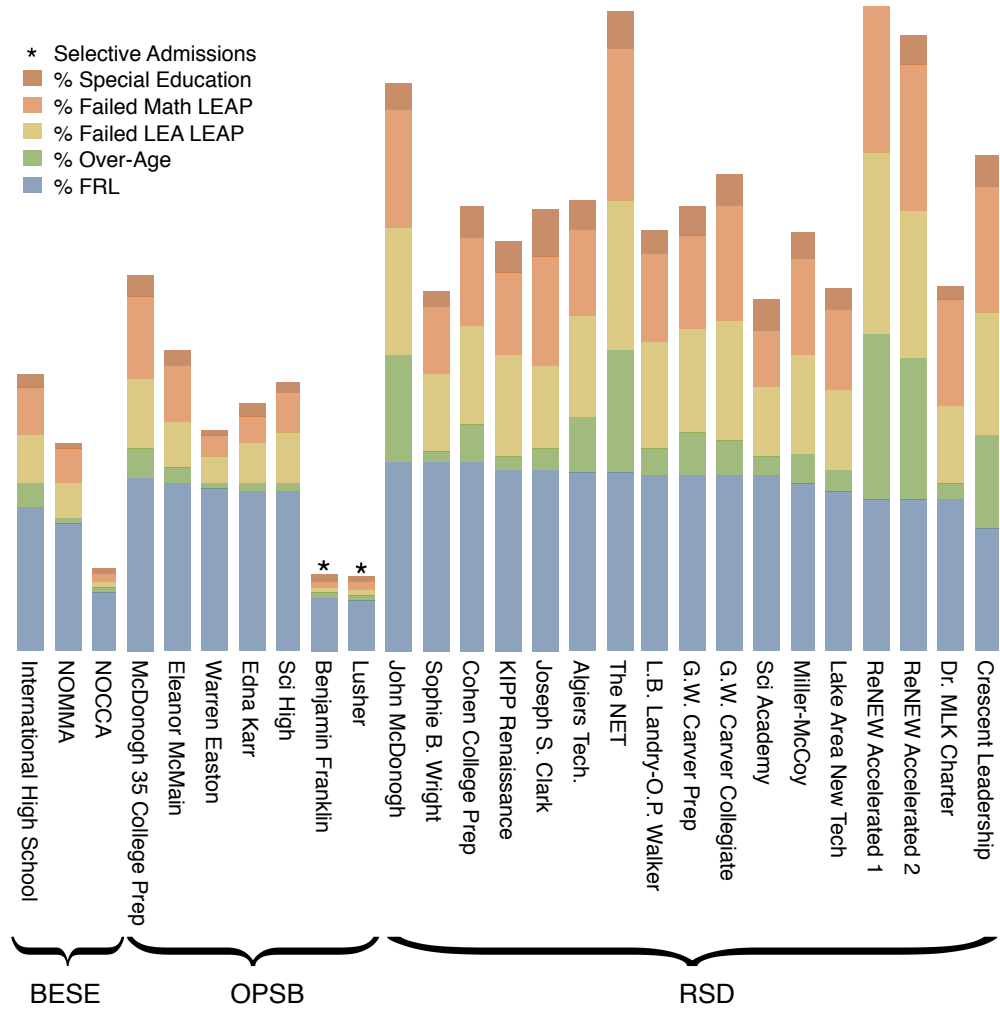
Additional research should be conducted to identify what makes a school successful at serving vulnerable populations. Further, while this analysis identifies the relationships between characteristics of vulnerable students and academic achievement, it does not identify causal relationships.

## Appendix A: School Data

School	LEA	% FRL	EOC % Good or Excellent	ACT Index	Cohort Graduation Rate
Algiers Technology Academy	RSD-Algiers Charter Schools Association (ACSA)	92	34	25.8	61.2
Benjamin Franklin High School	Orleans Parish	28	100	128.1	97.5
Cohen College Prep	RSD-New Orleans College Preparatory Academies	98	60	No Senior Class	
Crescent Leadership Academy	RSD-Crescent Leadership Academy	64	7	No Available Data	
Dr. Martin Luther King Charter School for Sci/Tech	RSD-Friends of King	79	50	16.9	97.5
Edna Karr High School	Orleans Parish	83	68	55.9	92.4
Eleanor McMain Secondary School	Orleans Parish	86	49	59.6	90.7
G. W. Carver Collegiate Academy	RSD-Collegiate Academies	91	62	No Senior Class	
G. W. Carver Preparatory Academy	RSD-Collegiate Academies	91	66	No Senior Class	
International High School of New Orleans	Voices for International Business & Education	74	67	61.6	No Senior Class
John McDonogh High School	RSD-Future Is Now Schools: New Orleans, Inc.	98	10	8.1	No Available Data
Joseph S. Clark Preparatory High School	RSD-FirstLine Schools, Inc.	93	31	11.8	77.4
KIPP Renaissance High School	RSD-Knowledge is Power Program (KIPP) N.O.	94	58	No Senior Class	
Lake Area New Tech Early College High School	RSD-New Beginnings Schools Foundation	82	41	32.6	90.8
Lord Beaconsfield Landry-Oliver Perry Walker High	RSD-Algiers Charter Schools Association (ACSA)	91	70	46	79.4
Lusher Charter School	Orleans Parish	27	96	119.6	97.5
McDonogh #35 College Preparatory School	Orleans Parish	90	43	41.3	92
Miller-McCoy Academy for Mathematics and Business	RSD-Miller-McCoy Academy for Math and Business	87	16	15.6	75
New Orleans Center for Creative Arts	New Orleans Center for Creative Arts	31	92	No Available Data	
New Orleans Charter Science and Mathematics HS	Orleans Parish	83	63	64.5	83.8
New Orleans Military/Maritime Academy	New Orleans Military/Maritime Academy	66	85	No Senior Class	
ReNEW Accelerated #1	RSD-ReNEW	79	No Available Data	6.3	No Available Data
ReNEW Accelerated #2	RSD-ReNEW	79	No Available Data	<5	No Available Data
Sci Academy	RSD-Collegiate Academies	91	72	76	77.4
Sophie B. Wright Learning Academy	RSD-Institute for Academic Excellence	98	38	71.4	86.4
The NET Charter High School	RSD-Educators for Quality Alternatives	92	17	7.1	No Available Data
Warren Easton Senior High School	Orleans Parish	84	73	50.3	97.5

Appendix B: Student Characteristics

Distribution of Vulnerable Students in New Orleans High Schools



Note: Totals can add up to more than 100% since a student can fall into multiple categories.



## Appendix C: Methodology

The analysis was conducted using ordinary least square regression. Regression analysis is a statistical process used to estimate the relationships among variables. For this study, the analysis focused on the relationship between the dependent variable (academic achievement) and the independent variables representing characteristics of targeted student populations (Failed LEAP, Over-age for grade level, FRL, and Special Education.) In addition, a variable indicating school selective admissions criteria was included in the analysis. If a school had selective admissions criteria, the value of this variable was one; if it does not, the value was zero.

Using data from all public schools serving high school grades, three regression analyses were conducted, one for each of the three academic achievement variables (EOC passage rates, ACT index, and cohort graduation rates). The independent variables reflecting characteristics of targeted student populations, as well as selective admissions, were included in the analysis

$$\text{Academic Outcomes} = \beta_0 + \beta_1(\% \text{ Failed LEAP}) + \beta_2(\% \text{ Over-age for grade level}) + \beta_3(\% \text{ FRL}) + \beta_4(\% \text{ SpEd}) + \beta_5(\text{Selective admissions})$$

### EOC passage rates

$$\text{EOC passage rates} = 94.11 - .485(\% \text{ Failed LEAP}) - .166(\% \text{ Over-age for grade level}) - .237(\% \text{ FRL}) - .405(\% \text{ SpEd}) + 9.2 (\text{Selective admissions})$$

Based on the equation:

- At an open enrollment school with no 9<sup>th</sup> graders who failed LEAP, no students who are over-age for grade level, no students eligible for free or reduced lunch, and no special education students, the EOC passage rate is predicted to be 94 percent.
- For every 10 percentage point increase in students who failed LEAP, the EOC passage rates is predicted to decline by 4.85 percentage points.
- For every 10 percentage point increase in students who are over-age for grade level, the EOC passage rate is predicted to decrease by 1.66 percentage points.
- For every 10 percentage point increase in students eligible for free or reduced price lunch, the EOC passage rate is predicted to decrease 2.37 percentage points.
- For every 10 percentage point increase in students with special education status, the EOC passage rate is predicted to decrease by 4.05 percentage points.
- If a school has selective admissions criteria, the EOC passage rate is predicted to increase by 9.22 percentage points.

An R-squared of .684 means that the equation explains 68.4 percent of the variation in EOC passage rates among schools.

### List of Variables

Year	Variable	Grades
2013-14	FRL	9-12
2013-14	Overage	9
2013-14	Failed LEAP	9
2013-14	SPED	9-12*
2012-13	Selective Dummy	9-12*
2013-14	EOC	9-12
2012-13	ACT	12**
2011-12	Cohort Grad Rate	12

\*Or more, if combination school.

\*\*12th grade student's best score from 11th or 12th.

**ACT Index**

ACT Index =  $111.6 - .471 (\% \text{ Failed LEAP}) - .256 (\% \text{ Over-age for grade level}) - .522 (\text{FRL}) - .254(\% \text{SpEd}) + 22.85 (\text{Selective admissions})$

Based on the equation:

- At an open enrollment school with no 9<sup>th</sup> graders who failed LEAP, no students who are over-age for grade level, no students eligible for free or reduced lunch, and no special education students, the ACT Index is predicted to be 111.6.
- For every 10 percentage point increase in students who failed LEAP, the ACT Index is predicted to decline by 4.71 points.
- For every 10 percentage point increase in students who are over-age for grade level, the ACT Index is predicted to decrease by 2.56 points.
- For every 10 percentage point increase in students eligible for free or reduced price lunch, the ACT Index is predicted to decrease 5.22 points.
- For every 10 percentage point increase in students with special education status, the ACT Index is predicted to decrease by 2.54 points.
- If a school has selective admissions criteria, the ACT Index is predicted to increase by 22.85 points.

An R-squared of .768 means that the equation explains 76.8 percent of the variation in the ACT Index among schools.

**Cohort Graduation Rate**

Cohort graduation rate =  $94.7 - .182 (\% \text{ Failed LEAP}) - .0412 (\% \text{ Over-age for grade level}) - .413 (\text{FRL}) - .414(\% \text{SpEd}) + 6.672 (\text{Selective admissions})$

Based on the equation:

- At an open enrollment school with no 9<sup>th</sup> graders who failed LEAP, no students who are over-age for grade level, no students eligible for free or reduced lunch, and no special education students, the cohort graduation rate is predicted to be 94.7 percent.
- For every 10 percentage point increase in students who failed LEAP, the cohort graduation rate is predicted to decline by 1.82 percentage points.
- For every 10 percentage point increase in students who are over-age for grade level, the cohort graduation rate is predicted to decrease by 0.412 percentage points.
- For every 10 percentage point increase in students eligible for free or reduced price lunch, the cohort graduation rate is predicted to decrease 4.13 percentage points.
- For every 10 percentage point increase in students with special education status, the cohort graduation rate is predicted to decrease by 4.14 percentage points.
- If a school has selective admissions criteria, the cohort graduation rate rate is predicted to increase by 6.672 percentage points.

An R-squared of .412 means that the equation explains only 41.2 percent of the variation in the cohort graduation rate among schools.

**Actual vs. Predicted Values**

The model (equation) generated by the analysis can be used to calculate predicted values of academic outcomes based on each school's specific student targeted population. The predicted value lies within a 95 percent confidence interval of what academic achievement of a school in Louisiana with a given observed targeted student population is predicted to be.

The difference between the actual academic outcomes and predicted outcomes represents the extent to which the school is over- or under-performing what is predicted, given their targeted population.

**Limitations to the study include:**

- Data vary in year and grade level. For example, the percentage of students who failed LEAP in eighth grade is limited to 2013-14 ninth graders. The percentage of students who are over-age for grade level is limited to 2013-14 ninth graders. 2013-14 EOC passages rates reflect the performance of test-takers in grade nine through eleven. The ACT Index and cohort graduation rate associated with the graduating class of 2012. For this analysis, it is assumed that schools have similar populations across grade levels.
- Exact percentages were not available at the extremes and estimated percentages were used. For example, if the percentage of students was reported at <5%, the data were rounded down to 2.5%. Similarly if the percentage of students was reported at >95%, the data were rounded up to 97.5%. Rounding the percentages at the extremes of the distribution may slightly bias the estimates of the regression, though it is not likely to cause substantive differences in the schools' final predicted values.
- Special education data were available only at the school level and may be representative of more than just the high school grade levels. For example if a school has a combination of elementary or middle with high school grades, the school level percentage was used.

Furthermore it is important to recognize that there are many outside factors that influence academic achievement.

This analysis does not identify causal relationships; it indicates the direction and extent of the correlation between the dependent and independent variables. Using statewide data, the analysis identifies the average relationships between student achievement and characteristics of targeted student populations.

## Appendix D: Regression Results

	EOC	ACT Index	Cohort Grad Rate
% Failed LEA LEAP	-0.485*** (0.0555)	-0.471*** (0.0671)	-0.182*** (0.0549)
% Over-Age	-0.166*** (0.0638)	-0.256*** (0.0826)	-0.0412 (0.0409)
% FRL	-0.237*** (0.0412)	-0.522*** (0.0501)	-0.413*** (0.0722)
% SPED	-0.405** (0.160)	-0.254 (0.210)	-0.414** (0.171)
Selective Admissions	9.222*** (3.282)	22.85*** (3.834)	6.672** (3.107)
Constant	94.11*** (2.233)	111.6*** (2.725)	94.74*** (2.220)
Observations	319	293	287
R-squared	0.684	0.768	0.412

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix E: Citations

<sup>1</sup> Janet Quint, (May 2006). "Meeting Five Critical Challenges of High School Reform: Lessons from Research on Three Reform Models." MDRC.

<sup>2</sup> Ron Schacter. (July 2004). "Will he survive?" *District Administration*.

<sup>3</sup> Louisiana Department of Education. "Overview of the High School Strategy: Expanding Access, Choice, and Quality." Accessed on August 22, 2014 at [www.louisianaschools.net/lde/uploads/17314.doc](http://www.louisianaschools.net/lde/uploads/17314.doc).

<sup>4</sup> Patrick Dobard. (July 2014). "RSD New Orleans High School Results." RSD.

<sup>5</sup> National Center for Education Statistics. "NAEP State Comparisons." Accessed on August 22, 2014 at <http://nces.ed.gov/nationsreportcard/statecomparisons>.

<sup>6</sup> National Center for Education Statistics. Table 7, "Numbers and Types of Public Elementary and Secondary Schools From the Common Core of Data: School Year 2010–11." Accessed on August 22, 2014 at [http://nces.ed.gov/pubs2012/pesschools10/tables/table\\_07.asp](http://nces.ed.gov/pubs2012/pesschools10/tables/table_07.asp).