The "Raising the Bar" Series on Louisiana's Education Policy Strategies to Support Students from Birth Through High School

Technical Appendix—Data Sources and Methods

Elizabeth D. Steiner, Matthew D. Baird, Jill S. Cannon, Shelly Culbertson, Laura S. Hamilton, Maggie Q. Hannan, Julia H. Kaufman, Sophie Meyers

Sponsored by the Baton Rouge Area Foundation

For more information on this publication, visit www.rand.org/t/RR2303z5

Published by the RAND Corporation, Santa Monica, Calif.

Preface

This document is an appendix to a series of four reports that examine how policy actions intended to support students from birth through graduation from high school in the state of Louisiana are being implemented by educators and the organizations within which they work, and how those policy actions are related to student outcomes:

- *Raising the Bar for Early Childhood Education: Early Signals on How Louisiana's Education Policy Strategies Are Working for Early Childhood Providers and Community Networks* (Jill S. Cannon, Sophie Meyers, and Julia H. Kaufman, Santa Monica, Calif.: RAND Corporation, RR-2303/1-BRAF, 2019, www.rand.org/t/RR2303z1)
- *Raising the Bar for K–12 Academics: Early Signals on How Louisiana's Education Policy Strategies Are Working for Schools, Teachers, and Students* (Julia H. Kaufman, Elizabeth D. Steiner, and Matthew D. Baird, Santa Monica, Calif.: RAND Corporation, RR-2303/2-BRAF, 2019, www.rand.org/t/RR2303z2)
- *Raising the Bar for Teacher Preparation: Early Signals on How Louisiana's Education Policy Strategies Are Working Across the State* (Maggie Q. Hannan, Laura S. Hamilton, and Julia H. Kaufman, Santa Monica, Calif.: RAND Corporation, RR-2303/3-BRAF, 2019, www.rand.org/t/RR2303z3)
- *Raising the Bar for Graduation Pathways to College and Work: Early Signals on How Louisiana's Education Policy Strategies Are Affecting College and Career Readiness* (Shelly Culbertson, Matthew D. Baird, Sophie Meyers, and Julia H. Kaufman, Santa Monica, Calif.: RAND Corporation, RR-2303/4-BRAF, 2019, www.rand.org/t/RR2303z4).

As their titles indicate, each of the four reports focuses on a different topic that has been the focus of Louisiana's education policy reforms: early childhood education, K–12 academics, teacher preparation, and graduation pathways. Taken together, these reports provide an overview of how an ambitious set of interconnected state policies, introduced in 2012, are making their mark on teaching and learning in early childhood centers, schools, and teacher preparation institutions across the state. This appendix describes the data sources, samples, and analytic methods used in the four reports.

RAND Education and Labor

This study was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking. This study was sponsored by the Baton Rouge Area Foundation, via a generous donation from Bloomberg Philanthropies.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to esteiner@rand.org, and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.

Contents

Preface iii
Tables v
Introduction and Methods 1
Case Studies 1
American Teacher Panel Surveys 10
Early Childhood Site Leader Survey 12
Secondary Data 15
References 18

Tables

Table 1. Demographic Overview of Case Study School Systems 2
Table 2. Case Study Interviews and Focus Groups 3
Table 3. Early Childhood Interviews and Focus Groups 3
Table 4. K–12 Academics, Graduation Pathways, and Teacher Preparation Interviews and Focus Groups 4
Table 5. Early Childhood Education Actions and Implementation Measures 6
Table 6. K–12 Academics Actions and Implementation Measures 7
Table 7. Teacher Preparation Actions and Implementation Measures 7
Table 8. Graduation Pathways Actions and Implementation Measures 8
Table 9. Unweighted Demographics of National and Louisiana Survey Respondents for February 2016 and March 2017 11
Table 10. Numbers of Louisiana Teachers Responding to March 2017 Survey for School Subgroup Comparisons 12
Table 11. Early Childhood Site Leader Survey Response Rate 13
Table 12. Early Childhood Site Ratings by Site Type and Data Source 14
Table 13. Secondary Data Received from the Louisiana Department of Education 16

Introduction and Methods

The data for the four-report "Raising the Bar" series were drawn from the following sources:

- case studies of Louisiana parish early childhood agencies, school systems, and their external partners, as well as interviews with a small number of Louisiana Department of Education (LDOE) state officials[1]
- surveys of state-representative samples of Louisiana K–12 public school teachers in 2016 and 2017, as well as comparisons with responses from a national sample of public school teachers
- A 2018 survey of Louisiana early childhood site leaders
- secondary data provided by LDOE.

We describe each of these sources in detail in the following sections.

Case Studies

Sample and Data Sources

We conducted two-day, in-person visits to four Louisiana parishes in spring 2018 (which are not identified in the interests of confidentiality). We solicited recommendations from LDOE staff for potential case study school systems that varied on key dimensions, such as organization type (i.e., district or charter), urbanicity, student achievement, size, and student demographics.[2] We purposefully selected four case study school systems—three school districts and one charter management organization—from this list that varied on these dimensions. Table 1 provides a demographic overview of the parish school systems included in our study. In the New Orleans Parish Charter School System, we were unable to speak to high school leaders, administrators, or counselors. Thus, that school system is excluded from our graduation pathways reporting.

[1] A parish in Louisiana is a territorial division corresponding to a county in other states. One school district typically serves students in each parish, although charter school systems serve most students in New Orleans Parish and some proportion of students in some other parishes.

[2] In this series of reports, we use the term *school system* to be inclusive of school districts and charter school systems in Louisiana.

Table 1. Demographic Overview of Case Study School Systems

Parish	Student Enrollment	Percentage of Economically Disadvantaged Students	Percentage of Minority Students	2018 School System Letter Grade
1	20,000–25,000	50–75%	25–50%	A–B
2: New Orleans Parish Charter School System	0–5,000	75–100%	75–100%	C–D
3	5,000–10,000	50–75%	50–75%	A–B
4	5,000–10,000	75–100%	75–100%	C–D

NOTES: A range is presented for each variable in the table to protect the confidentiality of those from the school systems with whom we spoke. The Parish 2 school system was a charter school system in New Orleans. School system letter grades are available at the system level for traditional parish school systems but not charter systems, although all schools—both traditional and charter—receive letter grades. All the schools in the charter case study system received letter grades in the C–D range for 2018. Urbanicity is not included in the table to protect the confidentiality of participants.

The purpose of the case study visits was to gather in-depth information about implementation of key state-level policy actions in the areas of early childhood education, K–12 education, graduation pathways, and teacher training in the parish. We conducted a total of 28 one-to-one interviews and 50 focus groups with principals, teachers, central office staff, high school students, early childhood center staff, teacher preparation program staff, other service providers, and key partners (e.g., teacher preparation and employer partners, as well as others described in more detail below) across the four parishes. Some interviews with teacher preparation providers were not specific to a parish because their organizations worked across parishes. Interviews and focus groups typically lasted 45 minutes to one hour. Focus groups included anywhere from 2 to 13 participants. Table 2 lists the number of interviews and focus groups conducted in each parish.

All interviewees were promised confidentiality, and all our procedures were approved by RAND's Human Subjects Protection Committee. Teachers and some administrative staff were offered a $25 Amazon gift card to thank them for their time. To ensure an accurate account of each interview and focus group, we requested permission from participants to record our conversations with them. Recorded interviews were transcribed prior to coding. When we were not given permission to record a conversation, we took detailed notes for coding purposes.

Table 2. Case Study Interviews and Focus Groups

Parish	Number of Interviews	Number of Focus Groups
1	5	18
2	9	5
3	0	15
4	6	11
5*	8	1

* Some participants worked across parishes (e.g., teacher preparation providers); we thus include a fifth "other" category.

To gather information specific to early childhood education (ECE), we conducted interviews and focus groups with ECE community network lead agency representatives, site leaders (i.e., directors of centers, principals, and Head Start leaders), and site teachers, including staff in early childhood centers, Head Start, and pre-kindergartens administered by local parish school districts. The interviewees and focus group participants were typically selected by the representative for the lead agency for the Early Childhood Network, which is the program administrator for all early childhood sites serving publicly funded children in that parish. We asked ECE lead agency representatives to give us the opportunity to interview ECE site leaders in a given parish, as well as teachers from both independent and school-affiliated centers. We also spoke with lead agency staff responsible for supervising ECE efforts in each parish. Table 3 shows the number of early childhood–focused interviews and focus groups conducted in each parish, along with the number of staff who participated.

Table 3. Early Childhood Interviews and Focus Groups

Parish	Interviews	Focus Groups	ECE Lead Agency Representatives	ECE Site Leaders	ECE Teachers
1	1	2	1	5	8
2	4	3	5	4	7
3	0	3	2	3	4
4	1	3	1	4	10
5*	1	0	1	0	0

* n = 55 participants. Some participants worked across parishes (e.g., teacher preparation providers); we thus include a fifth "other" category for parish.
NOTES: Interviews were typically with lead agency representatives, while focus groups included either site leaders or teachers. But, in some cases, lead agency representatives joined focus groups.

To enhance our understanding of key K–12 academic policies and reforms, we spoke with a total of 135 staff—including school system central office staff, school leaders, and teachers—across the four case study sites in interviews or focus groups. At each site, we spoke with the superintendent or assistant superintendent, central office curriculum supervisors, two to three school leaders, and teachers. We requested that school systems arrange for us to speak with school leaders at various school levels (e.g., elementary, middle, high), as well as teachers with variation in years of teaching experience, subjects taught, and grade level.

We investigated graduation pathways by conducting interviews and focus groups with a total of 185 individuals across many stakeholder groups, including high school students, high school leaders, central office staff, teachers, and guidance counselors, higher education providers, and workforce development partners (e.g., employers, workforce investment board staff). In each parish, we requested to school systems that we speak with high school teachers with variation in years of teaching experience and subjects taught. School administrators selected students for the focus group so that the group would include students with a mix of gender, age, interests, and learning levels. We asked school system administrators in our case study sites to identify their higher education and workforce partners and provide us with contact information for those partners. We then contacted those partners to request an interview. In some cases, we interviewed higher education and workforce partners during our case study visits because an administrator invited them to attend our visits.

Table 4 summarizes the K–12, graduation pathways, and teacher preparation program interviews and focus groups we conducted. We present the information for these three policy areas in the same table because many of the school-system-level staff we interviewed responded to questions about all three topics.

We learned more about teacher preparation programs through conversations with eight staff members in such programs (e.g., program directors and coordinators) and discussions with K–12 administrators, teachers, and school leaders in all the case study sites. We selected the teacher preparation programs by asking administrators and school leaders in case study sites about their teacher preparation partners, and then contacted those providers with interview requests. In two cases, the school systems had in-house teacher preparation staff, so we spoke to those individuals in an interview and a focus group.

Table 4. K–12 Academics, Graduation Pathways, and Teacher Preparation Interviews and Focus Groups

			School-Based Staff				External Partners		
Parish	Interviews	Focus Groups	Central Office Staff	School Leaders	Teachers	Counselors	Higher Ed	Workforce	Teacher Prep
1	4	16	10	6	17	13	0	2	1
2*	5	2	3	2	9	0	0	0	0
3	0	12	4	6	29	2	0	3	2
4	5	8	6	3	22	2	0	1	0
5**	7	1	0	0	0	0	9	0	7

* Parish 2 was a smaller school system than the others, and we spoke to school leaders in that parish individually rather than in focus groups, which is why the numbers of focus groups are smaller for Parish 2 than the other parishes. In addition, we did not interview any *high school* leaders or teachers in Parish 2, which is why no counselors or higher education/workforce partners are listed for that parish.
** Some participants worked across parishes (e.g., teacher preparation providers); we thus include a fifth "other" category.

Lastly, to ensure that we were up to date on any changes in state policies, we conducted short interviews with several state officials. These interviews included questions about specific policy areas where we had questions, as well as more general questions about any new changes to policies that might affect ECE, teacher preparation, K–12 academics, or graduation pathways.

Interview and Focus Group Protocol Content

Protocol development for interviews and focus groups was guided by our understanding of state actions for each policy area and the likely factors influencing implementation of those actions by those in central office administrator, early childhood director, school leader, teacher, counselor, and external partner roles (Kaufman et al., 2018). Specifically, for each of our four policy areas (ECE, K–12 academics, graduation pathways, and teacher preparation), we developed a list of potential implementation measures aligned with the policy actions identified in Kaufman et al. (2018). That list of implementation measures guided development of semistructured interview and focus group protocols for each role group we expected to interview. These measures are outlined in Tables 5 through 8.

Separate protocols were developed for (1) early childhood administrators (e.g., network lead agency staff and directors of centers); (2) early childhood center teachers; (3) early childhood ancillary preparation providers; (4) central office and school leaders; (5) new teachers; (6) experienced teachers; (7) guidance counselors; (8) high school students; (9) teacher preparation providers; and (10) other external partners supporting graduation pathways in high schools, including workforce board members, employers, higher education providers, and external certification or course providers.

During protocol development, we first determined which role groups could provide perspectives related to each implementation measure, and then we used measures to guide question development. For example, for our first implementation measure in Table 5—"ECE staff support the rating system as a definition of quality"—we asked ECE center staff (i.e., site leaders and teachers) the following questions about ECE site ratings:

- Is everyone aware of the new Performance Profiles and site ratings for all publicly funded licensed programs?
- [If so] Do you agree with your site's rating that came out most recently? Why or why not?
- Do you feel this rating is a reasonable measure of program quality? Why or why not?
- Do you feel this rating system will improve children's development and learning? Why or why not?
- Do you have suggestions to improve the rating system, or is it fine as is?

Participants in each role group received questions related to the policies and implementation measures they were most qualified to discuss, and they received questions about multiple policy areas as appropriate. For example, the protocol for superintendents of school systems included questions about implementation measures for ECE (if applicable), K–12 actions, graduation

pathways, and teacher preparation, whereas an ECE site leader or teacher would be asked only questions related to ECE. Time limitations in the interviews sometimes prevented us from asking questions related to all implementation measures within individual protocols.

Table 5. Early Childhood Education Actions and Implementation Measures

State Actions	Key Implementation Measures (by Action)
1. Create and require a unified rating system, connected to licensure and funding for all publicly funded centers, to provide information on center quality. 2. Strengthen lead teacher preparation requirements through a new ECE teacher credential: the Early Childhood Ancillary Certificate. 3. Signal to ECE staff which curricula, formative assessments, and professional development are high quality and standards-aligned. 4. Increase funding for Child Care Assistance Program (CCAP) subsidies to increase parity, and encourage diversity in types of centers serving publicly funded children. 5. Provide funding incentives tied to higher-quality ratings, teacher training, and curriculum use. 6. Define and require community networks for administration and communication, including coordinated ECE program enrollment for families.	• ECE staff support the rating system as a definition of quality (Action 1). • Lead ECE teachers know about and have met or are pursuing Ancillary Certificate requirements (Action 2). • ECE staff are aware of which curricula are defined as high-quality by the state and the Child Care Curriculum Initiative (Actions 3 and 5). • ECE centers adopt Tier I curricula and ECE staff use those curricula in the classroom (Action 3). • ECE community networks provide curriculum-aligned professional development and encourage use of formative assessments endorsed by the state (Action 3). • Teachers participate in standards-aligned professional development and use state-endorsed Teaching Strategies GOLD formative assessments (Action 3). • Knowledge of Classroom Assessment Scoring System (CLASS) measures and access to high-quality curricula and assessments (Action 3). • CCAP centers receive higher subsidies for eligible children that are on par with pre-K (Action 4). • ECE lead teachers have access to Ancillary Certificate Teacher Preparation Programs and are aware of funding incentives (Actions 2 and 5). • Families are aware of center-based options and are able to apply to and enroll in the center of their choice (Action 6).

Table 6. K–12 Academics Actions and Implementation Measures

State Actions	Key Implementation Measures (by Action)
1. Use state standards, assessments, and accountability to define and communicate a high bar for what is expected from schools and students. 2. Signal to educators which instructional materials are high-quality and which are not. 3. Increase supply of high-quality, curriculum-specific professional development. 4. Provide funding incentives tied to use of high-quality curricula, professional development, and formative assessments. 5. Use communication structures to identify champions and gather information.	• School system staff (administrators, teachers, other instructional staff) understand and support standards, assessments, and accountability metrics as definition of quality (Action 1). • School system staff are aware of which curricula are defined as high-quality by the state and support the curriculum review process (Action 2). • School system staff feel incentivized to adopt and use curriculum-aligned professional development and formative assessments supported by the state (Action 3 and Action 4). • School systems adopt high-quality curricula, and teachers use that curricula (Action 4). • Teachers participate in curriculum-aligned professional development and use the state-provided formative assessments (Action 4). • Communication lines from the state to school system staff (administrators, teachers, other instructional staff) are open and used frequently to provide state policy guidance and gather feedback (Action 5).

Table 7. Teacher Preparation Actions and Implementation Measures

State Actions	Key Implementation Measures (by Action)
1. Incentivize early adoption of the state's vision for high-quality teacher preparation through information gathering and communication activities, and voluntary school system–teacher preparation partnership funding. 2. Provide consistent expectations and training for new teacher mentors. 3. Codify a vision for high-quality teacher preparation that includes clear requirements and accountability structures for teacher preparation programs.	• Preparation providers and parishes/school systems develop strategies to sustain collaboration around teacher training (Action 1). • Preparation providers and school systems collaborate to link teacher candidates with mentors and provide yearlong residency opportunities (Action 1). • Cadre of high-quality mentor teachers established across parishes/school systems in Louisiana (Action 2). • Teacher training is aligned with workforce needs and competencies that are defined as high quality by the state (Action 3). • Teacher preparation program rating system is developed and enacted across the state (Action 3). • Teachers learn competencies during training, mentorship, and residency that prepare them to address standards and be effective once they are in the classroom (Action 3).

Table 8. Graduation Pathways Actions and Implementation Measures

State Actions	Key Implementation Measures (by Action)
1. Require all high school students to pursue a pathway toward an industry-based certificate, postsecondary enrollment, or both. 2. Implement graduation requirements that facilitate links with college and technical school admission and financial aid. 3. Provide public data to hold Louisiana schools accountable on performance related to college and career readiness, valuing both tracks equally. 4. Create and offer course pathways that lead to high-quality industry credentials and preparation for certain college majors. 5. Enable Louisiana teachers to have the qualifications needed to implement the Jump Start pathway.	• LDOE and high schools provide K–12 and K–16 pathways of sufficient number and quality (Actions 1 and 4). • Students are aware of and take advantage of college and career options provided by the school, in a way that fits with their interests, aspirations, and skills (Action 1). • High schools provide students with clear information about their options related to college and career (Action 1). • High schools provide students with clear information and resources to facilitate completion of financial aid forms, taking of the ACT, and admission requirements (Action 2). • Leaders, educators, and students are aware of and can access public data on their school's performance related to college and workplace readiness (Action 3). • Leaders and educators create a school environment in a way that communicates both college and workplace readiness as quality options (Action 3). • Louisiana's regional workforce development boards, LDOE, higher education, and high schools partner to provide high-quality pathways that address employment needs (Action 4). • High schools offer courses required for college admission, and other options (e.g., Advanced Placement [AP]) that support certain college majors (Action 4). • High schools partner with external providers to offer courses and certifications in areas where they do not have options (Action 4). • Teachers of Jump Start courses have received appropriate professional training and passed relevant industry-based certification exams (Action 5).

Analysis

We analyzed the qualitative data using Dedoose software, which allowed us to code for common themes across case study sites, policy reform topics, and sources (e.g., teachers, higher education partners) and to develop a database of coded data. The analysis of the interview and focus group data proceeded in several steps. First, interview notes were transcribed from the audio recordings and checked for accuracy. The transcripts were then coded in Dedoose using a thematic codebook developed by the evaluation team to align with the four areas of state reforms, key state actions, and implementation measures. For example, given that several of our implementation measures related to support for state policies and definitions of quality, one of our codes was "positive perceptions of state policies/support." In another example, given that a state action for ECE focused on provision and use of state-approved curricula, formative assessments, and professional development, our K–12 codes included "K–12 curricula," "K–12 formative assessment," and "K–12 support and training." The themes were iterated upon in several rounds until coders agreed that we had captured all major themes. Once the thematic coding was complete, we conducted a second round of coding, analyzing the data according to questions of interest (e.g., what are teachers' perceptions of the curriculum rating system?). In this stage, we used an inductive coding process (i.e., codes were derived from the data rather than from a structured codebook) to develop key themes and responses to questions of interest. Any inductive codes that would affect coding across multiple areas were only added after discussion with the team. Those coding in the same policy area periodically met together to discuss coding for particular transcripts that were coded together, as well as any questions that arose during the coding process. Altogether, 10 percent of transcripts were coded by two coders, who then discussed their codes and reconciled any differences. Finally, we summarized implementation of each state action across the four case study sites and highlighted site-specific examples, similarities, and differences. We also summarized interviews with teacher preparation programs and higher education partners that were not linked to a specific site.

Limitations

While we purposively selected case study sites to vary in regard to context and demographics, readers should keep in mind that these sites do not represent all the differences among schools, staff, and students in Louisiana. Thus, findings from case studies cannot represent all perspectives across the state. In addition, all case study findings are based on interviews and focus groups; we have no way of objectively verifying the accuracy of this self-report data.

American Teacher Panel Surveys

Sample and Survey Description

The RAND Corporation's American Teacher Panel (ATP) was designed to capture teachers' perceptions on major education policies and programs, as well as how teachers' respond to those policies. The ATP consists of randomly sampled, full-time K–12 public school teachers across the United States in all subjects, including teachers of special education students and English language learners (ELLs), and state-representative samples in 25 states, including Louisiana. Teachers who agreed to serve on the ATP are surveyed on a regular basis and complete anywhere from two to four surveys per year.

The report in this series that focuses on state-level K–12 academic reforms (Kaufman et al., 2019) draws on data from two ATP administrations—one in February 2016 and one in March 2017. The choice of these administrations was based on our theory of action for K–12 academic reforms and policies: We chose surveys that were aligned with key Louisiana policy actions we had identified for K–12 academics, including those related to adoption of revised state standards for English language arts (ELA) and mathematics in 2016 (Louisiana adopted the Common Core standards in 2010; these were later revised); reviews of instructional material that began in 2015; and professional development opportunities that were offered to teachers starting with the new administration in 2012. Both surveys included questions about (1) the instructional materials teachers used, (2) teachers' understanding of approaches and content aligned with their state standards for mathematics and ELA, (3) teachers' standards-aligned instructional practices, and (4) standards-aligned professional development teachers received.

Table 9 presents demographics of ATP respondents nationally, and in Louisiana, in 2016 and 2017. The response rate for the February 2016 survey was 45 percent (n = 1,321), and the maximum margin of error for overall responses was 4.0 percent. The response rate for the March 2017 survey was 66 percent (n = 1,789). ATP response rates are similar to those of other national surveys.[3]

[3] With the emergence of web-based surveys, response rates have been in decline. Nulty (2008) found that responses to web-based surveys ranged between 20 and 47 percent. Similarly, a metastudy of 68 surveys in 49 studies by Cook, Heath, and Thompson (2000) found an average 40 percent response rate among national survey studies.

Table 9. Unweighted Demographics of National and Louisiana Survey Respondents for February 2016 and March 2017

	February 2016		March 2017	
	National	Louisiana	National	Louisiana
Total sample	2,963	412	2,697	375
Number of respondents	1,321	184	1,789	231
Response rate	45%	45%	66%	62%
Subgroup means				
Elementary (K–5)	53%	49%	51%	57%
Secondary (6–12)	48%	49%	56%	47%
Math teachers	54%	51%	57%	50%
ELA teachers	62%	55%	65%	57%

Analysis

To ensure representativeness, panel members were originally sampled randomly from across the United States and the data were weighted to account for differential sampling and nonresponse. Weighting involved both modeling selection probabilities (i.e., the chance that an individual was contacted for inclusion into the ATP) and response probabilities (i.e., given that individuals were selected, the probability that they responded to our survey). Variables accounted for in the weighting included teacher background (e.g., gender, professional experience) and school-level characteristics (e.g., school size, level, urbanicity, socioeconomic status). Weighting of responses was used to account for differences between the national population of eligible teachers and the set of respondents to the survey. Such differences were modeled across a set of wide characteristics, including gender, school size, and urbanicity.

We compared responses of Louisiana teachers with those of other teachers nationally and used t-tests to test for statistically significant differences. We used Benjamini-Hochberg adjustments, using a false discovery rate of 0.05, to adjust for multiple comparisons, which allowed us to distinguish meaningful statistically significant results from results that were only statistically significant due to chance when performing large numbers of statistical tests (Benjamini and Hochberg, 1995).

In the report on K–12 policy actions that is part of this published series, we compared teacher survey responses across schools with different student demographics. Specifically, we compared March 2017 survey reports of mathematics and ELA teachers in schools above the 75th percentile nationally in terms of the percentage of students who received free and reduced lunch (High FRL), as well as those above the 75th percentile nationally in terms of percentages of black and Hispanic students (High Black and Hispanic), compared with their counterparts in schools with lower percentages of FRL and black and Hispanic students (Low FRL and Low Black and Hispanic). We chose to designate teachers in schools above the 75th percentile as "high" FRL and black/Hispanic given that this percentile approximates the cutoff for the top quartile of teachers across the United States, in terms of the percentage FRL and black or Hispanic students. It also provides a uniform cutoff point—as well as good sample sizes for comparison—across these teacher subgroups.

Limitations

Although our sample size supports comparisons between all Louisiana teachers and those in the United States, the Louisiana American Teacher Panel sample includes a relatively small number of mathematics and ELA teachers in the top quartile of schools with the highest percentages of black and Hispanic students (as noted in Table 10). We used t-tests to test for statistically significant differences between the survey responses of Louisiana teachers in High FRL and High Black and Hispanic schools and the survey responses of teachers in Low FRL and Low Black and Hispanic schools. Given the small sample size and exploratory nature of these within-Louisiana comparisons, we did not adjust for multiple comparisons. Readers should interpret these exploratory results with caution and keep in mind that they represent trends for relatively small numbers of teachers. In addition, as with any survey self-report data, readers should keep in mind that teachers' reports may not fully reflect their beliefs and actions.

Table 10. Numbers of Louisiana Teachers Responding to March 2017 Survey for School Subgroup Comparisons

	ELA Teacher (*N*)	Math Teacher (*N*)
High Black and Hispanic (school black and Hispanic students >75th percentile)	33	24
Low Black and Hispanic (school black and Hispanic students 1–75th percentile)	97	68
High FRL (school FRL students >75th percentile)	35	23
Low FRL (school FRL students 1–75th percentile)	95	69

Early Childhood Site Leader Survey

Sample and Survey Description

We surveyed leaders of publicly funded ECE sites in Louisiana to gather more systematic information about their perceptions and implementation of state-level early childhood reforms. Eligible survey respondents were site leaders (i.e., directors, principals, and Head Start leaders) of Type III child care centers, Head Start/Early Head Start programs, and "school" sites serving pre-kindergarten students in public school–based programs or through the Nonpublic School Early Childhood Development Program. The announcement and an anonymous link to the online survey were circulated in the LDOE newsletter, which was emailed to ECE site leaders and others biweekly in August and September 2018. This survey was sent to most of the site leaders who were eligible to participate. In addition, LDOE solicited the help of ECE community network lead agencies in publicizing the survey to eligible participants in their parishes in September 2018.

The survey was developed specifically for this study using original questions related to key policy actions and implementation measures for ECE in Louisiana (as summarized in Table 5).

In particular, site leaders were asked their perceptions about the state's unified rating system and use of the CLASS observations to determine center ratings, knowledge of and pursuit of Ancillary Certificate requirements among center teachers, familiarity with and use of Tier 1 curricula and Teaching Strategies GOLD in centers, professional development teachers receive, changes at Type III centers as a result of Child Care Assistance Program subsidy changes, local coordinated enrollment efforts, and communication with the state. Respondents were assured that their responses would be confidential. We vetted the survey questions with LDOE ECE staff to ensure that item wording was accurate and correct terminology was used. The survey generally took between 10 and 15 minutes to complete, and respondents were provided with a $20 Amazon electronic gift card to thank them for their time. Survey materials and administration procedures were approved by RAND's Human Subjects Protection Committee.

Although the survey announcement received broad distribution through LDOE email and local ECE community network communications, the resulting sample is a convenience sample. The respondents are more likely to be those leaders who read email communications from the state or local network, which may bias answers toward those who are more engaged in the state or network system. However, the information gathered provides a broad, descriptive look at the opinions of ECE site leaders statewide, and we used the results to supplement our interview and focus group data.

Table 11 provides information about the number of survey respondents by site type compared with the number of eligible sites as of June 2018 (provided by LDOE). The 245 survey responses represent about 16 percent of eligible sites statewide, with higher representation among leaders of child care centers (23 percent) than school sites (9 percent). Responses represent sites in 52 of the 65 ECE community networks. Half of all survey responses came from nine networks.

Table 11. Early Childhood Site Leader Survey Response Rate

Site Type	Number of Sites in Survey	Number of Eligible Sites Statewide	% Response of Eligible
Child care center (Type III)	158	677	23.3
School	59	688	8.6
Head Start/Early Head Start	28	192	14.6
Total	245	1,557	15.7

When examining the rating levels of responding sites compared with those from LDOE administrative data for 2016–2017 Performance Profiles,[4] the surveyed sites had similar general

[4] These data are from an earlier time point than site data presented in Table 11, and so the number of sites do not exactly match.

patterns, with most respondents reporting a rating of Proficient (59 percent, compared with 67 percent statewide) or Approaching Proficient (28 percent, compared with 30 percent), and few (3 percent each group) reporting Excellent. None of the very few sites rated Unsatisfactory in the state (0.5 percent) were included in our survey. Nine percent of survey respondents reported they did not know their site's 2016–2017 rating level, so we were unable to classify them. Table 12 presents survey respondent and statewide ratings by site type.

Table 12. Early Childhood Site Ratings by Site Type and Data Source

Site Type and Data Source	Excellent (%)	Proficient (%)	Approaching Proficient (%)	Unsatisfactory (%)	Don't Know (%)	Number of Sites
Type III center						
Survey	2	54	34	0	9	158
Statewide	<1	51	48	1	—	663
Schools						
Survey	9	66	14	0	12	58
Statewide	5	84	11	0	—	676
Head Start/ Early Head Start						
Survey	0	71	25	0	4	28
Statewide	<1	67	32	<1	—	190
Total						
Survey	3	59	28	0	9	244
Statewide	3	67	30	<1	—	1,529

SOURCE: RAND Louisiana Early Childhood Site Leader Survey and LDOE 2016–2017 administrative data for licensed sites statewide.
NOTE: Total may not sum to 100 because of rounding. Statewide data exclude sites that were closed, revoked, or a Type I or Type II center.

Analysis

We included in analyses all respondents who reported they were a site leader of an eligible site and who answered at least the first question about perceptions. All responses were included in analysis for a given question, resulting in different sample sizes across questions. We analyzed the data using Stata 14.2 software and calculated item frequencies and percentages. For many questions, we also compared responses by site type. Specifically, we compared responses from leaders of child care centers with leaders of non–child care centers (i.e., schools and Head Start/Early Head Start), because operations and resources differ between these groups. Non–child care centers were combined for subgroup analyses because of the small number of Head Start sites in our sample and the distinction in state policies toward Type III sites in several reform areas. We use the Pearson chi-squared test to examine whether there are statistically

significant differences between the subgroup responses. We use a *p*-value of 0.05 when reporting significant differences. We did not use the Benjamini-Hochberg correction (Benjamini and Hochberg, 1995), because these analyses are exploratory and are intended only to present emerging issues.

Limitations

As with the ATP data, readers should keep in mind that survey reports from site leaders may not fully reflect their beliefs and actions. In addition, given the small size of the site leader survey sample, relative to all site leaders across the state of Louisiana, readers should interpret survey results with caution.

Secondary Data

Sample and Data

We acquired several secondary data sets from LDOE. These included detailed student-level data for several years (varying depending on the variable) with the student demographic information, grade level, program participation (e.g., the FRL program, Jump Start, etc.), test scores (e.g., percentile Louisiana Educational Assessment Program [LEAP], ACT), grade progression and graduation status, and college enrollment. We further acquired school and school system–level data on school demographics, teacher characteristics, and course offerings (see Table 13).

Finally, we also obtained state-level National Assessment of Educational Progress (NAEP) scores and standard deviations for 2011 through 2017 in mathematics and reading for students in grades 4 and 8, as well as for subgroups within the state (e.g., by race and FRL status). For both national and Louisiana NAEP data, we acquired the data from the publicly available online tool Data Explorer, available from the National Center for Education Statistics. Average scale LEAP scores were first standardized by grade and year to z-scores and then converted to percentile scores using the normal distribution.

Table 13. Secondary Data Received from the Louisiana Department of Education

Student-Level Data	Years of Data*
Student demographic information (i.e., gender, ethnicity, FRL recipients, grade level)	2011–2017
LEAP percentile score for ELA, mathematics, science, and social studies	2011–2017
ACT composite scores	2010–2017
TOPS and Jump Start graduation pathway at the school level	2018
Jump Start participation and credits earned	2013–2017
TOPS dual participation rate and credits earned	2011–2017
Occupational credentials earned and ratings at the school level	2018
Schools offering AP classes	2011–2017
Schools offering Algebra II	2011–2017
WorkKeys participation and scores	2014–2017
Student graduation and drop-out rates	2012–2017
College enrollment rates	2011–2017

* Year refers to the spring year of an academic year—e.g., 2018 is for the 2017–2018 academic year.

Analysis

We used these data to estimate several trends and relationships. Most analyses used unadjusted data (such as for the NAEP analysis, counts of students taking career and technical education courses, proportion of schools offering advanced placement classes or Algebra II, etc.), which means that there is no statistical analysis beyond summations and averages. Unless otherwise specified, it should be assumed that any figure or table in the series reports unadjusted counts, scores, or proportions. However, when we made comparisons across groups (e.g., male versus female students), we adjusted for several student and school demographics to isolate any differences between the two groups. We made adjustments for several outcomes, including LEAP scores, ACT scores, and participation in programs; this is noted below the relevant figures. We estimated a model such as

$$Y_{ist} = \alpha + X_{ist}\beta + Z_{st}\gamma + \phi_t + \varepsilon_{ist}.$$

We evaluated outcome Y_{ist}, such as percentile LEAP test score or Jump Start participation, for student i in school s in year t as a function of student characteristics X_{ist} and school characteristics Z_{st}, as well as year fixed effects ϕ_t and random error terms ε_{ist}. Student characteristics included race and ethnicity, gender, English proficiency status, gifted status, special education status, and FRL program participation. For years available (2014, 2015, and 2016), we included economic disadvantaged status in addition to FRL; economic disadvantage is defined as the student's participation in one of several state-run assistance programs, such as Louisiana's food assistance program for low-income families or Louisiana's program for assistance to needy families with children to assist parents in becoming self-sufficient (Louisiana

Board of Elementary and Secondary Education, 2018). If multiple grades were included in our models, we also controlled for the grade of the student. School characteristics included the fraction of the school in year t with each of the before-listed student characteristics (e.g., the fraction of the students who were Hispanic), the total number of students in the school, and the rural-urban continuum level of the county the school was in.

Using the estimated model coefficients, we then calculated the predicted outcome for subgroups by the following:

$$E\left[Y_{ist}\middle|X_{ist}^{k}=1\right]=\frac{1}{N}\sum_{i=1}^{N}\left(\hat{\alpha}+\widetilde{X_{ist}}\hat{\beta}+Z_{st}\hat{\gamma}+\widehat{\phi_{t}}\right),$$

where $\widetilde{X_{ist}}=X_{ist}$, except for characteristic k, which is set to 1 for each student. For example, to estimate the predicted percentile LEAP scores for FRL and non-FRL students, respectively, we first calculated predicted scores for each student using the following approach: For a given FRL student we would keep all X_{ist} equal to the student's characteristics except for FRL, which would be set to 1, while for a given non-FRL student, it would be set to 0. We then use the individual-level predicted scores to calculate group averages. This approach adjusted for potentially correlated characteristics, such as race/ethnicity and rurality.

Finally, for Jump Start credential acquisition and for graduation pathway (TOPS versus Jump Start) information, we acquired school-level counts for all students and for subgroups, such as gender. These data were not made available to us at the student level. If the counts were below 10, the actual numbers were not reported, but were presented as "<10." To sum up across all schools, we used the midpoint of 4.5. However, we also used 0 as a minimum and 9 as a maximum to show what the true range would be, as noted below the relevant figures.

Limitations

These secondary data do not allow us to determine that changes in Louisiana's policies directly caused the observed trends in the outcomes we document; we can only hypothesize on their impact based on what we know about Louisiana's policies and their implementation. For the state's LEAP data, in particular, the content of the state's LEAP test changed in nearly every year of our analysis. Thus, changes in LEAP trends over time can only illustrate differences between subgroups of students who took the same test in each year, as well as changes in those differences over time.

References

Benjamini, Yoav, and Yosef Hochberg, "Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing," *Journal of the Royal Statistical Society*, Series B, No. 57, 1995, pp. 289–300.

Cannon, Jill S., Sophie Meyers, and Julia H. Kaufman, *Raising the Bar for Early Childhood Education: Early Signals on How Louisiana's Education Policy Strategies Are Working for Early Childhood Providers and Community Networks*, Santa Monica, Calif.: RAND Corporation, RR-2303/1-BRAF, 2019. As of June 11, 2019: https://www.rand.org/pubs/research_reports/RR2303z1.html

Cook, C., F. Heath, and R. L. Thompson, "A Meta-Analysis of Response Rates in Web- or Internet-Based Surveys," *Educational and Psychological Measurement*, Vol. 60, No. 6, 2000, pp. 821–836.

Culbertson, Shelly, Matthew D. Baird, Sophie Meyers, and Julia H. Kaufman, *Raising the Bar for Graduation Pathways to College and Work: Early Signals on How Louisiana's Education Policy Strategies Are Affecting College and Career Readiness*, Santa Monica, Calif.: RAND Corporation, RR-2303/4-BRAF, 2019. As of June 11, 2019: https://www.rand.org/pubs/research_reports/RR2303z4.html

Hannan, Maggie Q., Laura S. Hamilton, and Julia H. Kaufman, *Raising the Bar for Teacher Preparation: Early Signals on How Louisiana's Education Policy Strategies Are Working Across the State*, Santa Monica, Calif.: RAND Corporation, RR-2303/3-BRAF, 2019. As of June 11, 2019: https://www.rand.org/pubs/research_reports/RR2303z3.html

Kaufman, Julia H., Jill S. Cannon, Shelly Culbertson, Margaret Q. Hannan, Laura S. Hamilton, and Sophie Meyers, *Raising the Bar: Louisiana's Strategies for Improving Student Outcomes*, Santa Monica, Calif.: RAND Corporation, RR-2303-BRAF, 2018. As of April 12, 2019: https://www.rand.org/pubs/research_reports/RR2303.html

Kaufman, Julia H., Elizabeth D. Steiner, and Matthew D. Baird, *Raising the Bar for K–12 Academics: Early Signals on How Louisiana's Education Policy Strategies Are Working for Schools, Teachers, and Students*, Santa Monica, Calif.: RAND Corporation, RR-2303/2-BRAF, 2019. As of June 11, 2019: https://www.rand.org/pubs/research_reports/RR2303z2.html

Louisiana Board of Elementary and Secondary Education, "BESE Rulemaking Docket," webpage, 2018. As of December 4, 2018: http://bese.louisiana.gov/docs/rulemaking-docket/noi-january-2018-re-lac-28-pt-1-sections-503-1107-and-1303.pdf

Nulty, D. D., "The Adequacy of Response Rates to Online and Paper Surveys: What Can Be Done?" *Assessment and Evaluation in Higher Education*, Vol. 33, No. 3, 2008, pp. 301–314.