DATA QUALITY CAMPAIGN
Using Data To Improve Student Achievement

Connecting Policy and Data: What Are **Your** State's Critical Policy Questions?

Data Alone Are Not Valuable: Connect Data and Policy

Central to the 2005 launch of the Data Quality Campaign (DQC) was highlighting a set of 28 policy questions (Appendix A) that could not be answered without a statewide longitudinal data system consisting of 10 Essential Elements. High-quality longitudinal data are valuable only if that information is used to inform the pressing policy discussions and practical decisions policymakers, educators and other stakeholders face.

To date, information technology (IT) staff — including chief information officers, analysts, and state and local data managers — have provided vital leadership in developing state longitudinal data systems, but policymakers now must take on a more prominent role. Building and maintaining data systems is not solely an IT project. Policymakers from across the P–20 spectrum (e.g., governors, legislators, chiefs, agency heads and postsecondary leaders) need to prioritize and elucidate the critical questions and issues that data systems must answer. All stakeholders, policymakers in particular, need to advise the IT team on what data should be collected, how the data should be defined, how often they need to be

Working Together

The following anecdote (told to DQC staff at a state meeting) illustrates the inefficiencies and costs that states bear when policymakers do not work in partnership with data managers to develop data systems.

> *A state legislator contacted the data manager at the state department of education and asked how many of the state's students were currently enrolled in a physical education (PE) course. The data manager responded by saying that the state does not collect those data. The data manager pushed a bit deeper by asking the legislator what exactly he was trying to answer. The legislator responded that his committee was looking at student health/wellness/fitness issues and thought that PE enrollment would be a good indicator. The data manager informed him that although the state did not collect PE data, it did collect a number of other data elements that when taken together and analyzed would likely produce the type of information the committee needed to make some data-informed decisions.*

This story illustrates how stakeholders have become used to relying on proxy indicators because they are not used to having timely and useful access to rich information and that data managers and the users of the data often do not work in partnership, but in a responsive manner.

- Many state and federal data collections are the result of a policymaker looking for a piece of information to answer a question. In this case, upon learning that the state does not collect PE data, the legislator could have introduced legislation mandating the collection, which would have resulted in a time-consuming (often taking several years and increasing the reporting burden on districts and states) and expensive effort. By engaging the policymaker on the policy problem at hand, the data manager was able to leverage existing resources to provide the information needed at a much lower cost to the state and on a shorter timeline.
- This particular data manager either had the necessary expertise or had access to the expertise to deliver quality, timely and useful information to the legislator. ***The development of analytical capacity around data is critical if states are going to successfully connect data with policy.***

collected and how they need to be analyzed. Just as we do not ask construction workers to turn our houses into livable homes without guidance and input from the homeowner, we cannot ask IT staff solely to be responsible for turning large databases into robust information systems without guidance from policymakers.

To ensure that the data system infrastructure investments are leveraged fully, states must identify *what* the data are going to be used for, not the other way around. Good management for any project, including building a data system, starts with asking what the end goal of the effort is. The end goal in this case is not to have a longitudinal P–20/workforce data system but to have the ability to inform policy and practical questions that ensure alignment and continuous improvement across the human capital development system.

Using Data To Improve College and Career Readiness

Measuring the Education Pipeline: Common Data Elements Indicating Readiness, Transition and Success provides a brief roadmap to the types of questions, data elements and conversations that state policymakers need to have to inform their efforts to improve their state's college and career readiness agenda.

Policymakers and IT/data managers are essential partners in building, continuing to maintain and ensuring access to these systems. No one partner can do this alone, and a governance policy needs to be in place to ensure that data directors are part of policy conversations and that policymakers and other stakeholders articulate their needs for the system regularly so that data managers can respond to user demand. Without this constant communication and expected calibration, the partners may lack credibility and users may not trust the capacity of the system.

As states work to meet the American Recovery and Reinvestment Act (ARRA) requirement to follow individuals through the P–20 pipeline and into the workforce by 2011, their progress will be expedited and supported by using the following processes to guide the development and implementation of their cross-agency data sharing efforts:

- Prioritize, through broad-based stakeholder input, the critical policy questions to drive the development and use of longitudinal data systems;
- Ensure data systems are interoperable within and across agencies and sectors by adopting common data standards, definitions and language; and
- Protect personally identifiable information through governance policies and practices that promote the privacy and security of the information while allowing appropriate data access and sharing.

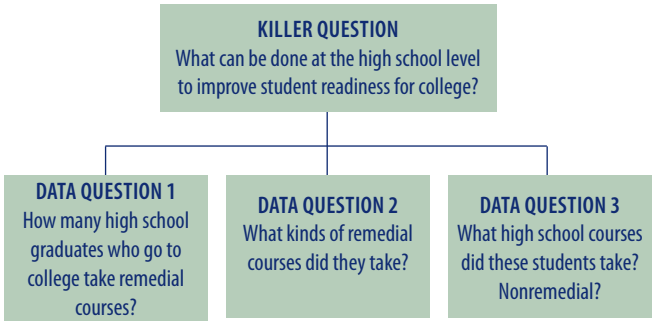
This paper further explores the need to have a common P–20/workforce vision and to develop key policy questions to drive the development of state data systems. It also provides a set of resources (appendices) to help states begin this task.

Beginning To Connect Policy and Data

States continue to make progress in building the 10 Essential Elements of longitudinal data systems; those who are strategically building these P–20/workforce systems to answer key policy questions will be able to leverage those investments by having greater transparency, richer measures of progress and accountability, and information to drive continuous improvement. Every state needs to have the detailed conversations about basic business or program-specific questions around customers, services, needs, frequency of updates, access/security, etc., that will inform the directions of expanded longitudinal data systems. Two states, New Mexico and South Carolina, provide case studies about the importance of developing and prioritizing a set of guiding questions before building longitudinal data systems. The following are examples of their individual approaches to these data/policy opportunities.

New Mexico

Staff from the New Mexico Office of Education Accountability, in conjunction with staff from several other states, developed the notion of "killer questions" to describe the key policy questions that come up over and over again across districts and states when they are provided with good data. To begin to identify and prioritize these "killer questions," New Mexico developed a template (Appendix B) that helped staff categorize the policy questions and then develop the corresponding data questions they would need to first ask and then answer to help solve a policy problem. The figure below represents a sample "killer question" and a few data questions that will inform the decisionmaking process of a policymaker.



New Mexico was able to identify the questions it needed to answer with its data system because it recognized the need to connect those responsible for policy and data and found a meaningful way to engage them in a discussion. The template serves as a bridge between two seemingly different worlds and enables the data system team to understand the uses of their product and the priorities of their key stakeholders (i.e., customers).

South Carolina

The team charged with building and implementing South Carolina's longitudinal data system also realized that the design should follow the intended uses of the system, but like teams in most states, they had a difficult time engaging policymakers in discussions about the data system. As a result, the team began to identify the key questions on their own, and their experience shines a light on the critical need for policymaker involvement as well as the incredible amount of analytical work involved once the questions are determined.

The project managers in South Carolina (Appendix C) first conducted a landscape review of all the questions they could find from a variety of sources (e.g., National Center for Education Statistics, various South Carolina stakeholder groups, South Carolina legislation) and then prioritized the resulting list of almost 400 questions based on whether or not the data needed to answer them were available quickly and easily. They narrowed their list down to six basic questions and used those questions to drive further development of the system. They identified categories, topics

and subtopics and tagged each question appropriately. They also matched each topic with all of the various types of users or "roles" that would be interested in the answers to those questions, and they identified what level of access those users would need (e.g., aggregate, student level, etc.).

Question: What are the course grades for students enrolled in Advanced Placement (AP) courses?

Category: **Students**	Topic: **Enrollment**	Subtopic: **AP**	Role: Top state education agency staff, student-level data; classroom teacher, limited student-level data
	Topic: **Test Results**	Subtopic: **Course Grades**	Role: Principals, student-level data; other school staff, aggregate data only

This type of detailed work is exactly what each state must go through to build a data system that can answer the questions facing stakeholders while providing role-based access and ensuring student privacy. Ideally, policymakers would have provided more input into the original list of questions to ensure that resources are allocated toward the highest priorities of the state. The "killer question" template referenced above is a great bridge to help both policymakers and data staff begin a conversation around these questions.

How To Identify and Prioritize the Critical Policy Questions in **Your** State

If states are to truly leverage these powerful data systems, they must engage the *right people* in conversations around what the system should be designed to *do*. The ARRA funding provides a unique catalyst for these critical discussions to finally begin in earnest. Developing a competitive Race to the Top application as well as the plan required in the State Fiscal Stabilization Fund will require significant participation from stakeholders across the P–20/workforce spectrum. These aligned funding streams are providing states with a strategic opportunity to break down traditional silos and engage policymakers and data managers in a thoughtful dialogue around using data for continuous improvement.

States cannot build an aligned P–20/workforce data system without first defining the goals of the entire system and the questions that the system should be designed to answer. If a state data system is not able to answer policymaker questions, the data system will lose policymaker support, and the state will fail to achieve any real sustainability for the system.

Once a state has developed an agreed-upon goal and set of critical questions around which to build its longitudinal data system, concerted efforts must be made to ensure this information can be used while also being protected. It is vital to ensure that there are governance structures and policies to guide the linking, sharing and accessing of information while protecting personally identifiable information. Common data definitions and architecture are critical to making sure disparate data systems in various agencies, sectors, districts and states are able to communicate with each other and do so efficiently and to appropriately link data. When these key steps are taken, states will have richer, more detailed, timely and useful information to answer their critical questions.

In addition to notable state efforts to identify and prioritize policy questions, the DQC partners have come together to identify questions and rank them based on their priorities (Appendix D). Our partners also are beginning to work together by sector to determine the list of critical questions in the early childhood (Appendix E) and postsecondary communities. The appendices of this document provide states with a place to start as they develop their state's critical policy questions.

Appendix A: Data Quality Campaign's 28 Policy Questions

Does your system have the necessary elements to address these key policy questions?

Predicting Success in Later Grade Levels
*Need Elements 1, 2, 3, 4**

1. What is the impact of preschool on later academic achievement (e.g., third grade test results)?
2. Do the effects of our early interventions "fade out" later?
3. Are students academically prepared for high school?
4. Which elementary and middle schools in the state are consistently highest-performing in preparing different student populations for high school?
5. Which elementary and middle schools produce the strongest academic growth among initially poorly-prepared students, and among initially well-prepared students?

Academic Growth
Need Elements 1, 3, 4

6. How many students are achieving at least one year's academic growth every year?
7. How many of the students who started out below grade level are achieving more than a year's growth?

Achievement Levels in Early Grades as Indicators of Later Success
Need Elements 1, 3, 4, 6, 7, 8, 9

8. What achievement levels in grades 3–7 indicate that a student is "on track" for later success?

Impact of Grade-Level Retention
Need Elements 1, 2, 3, 4, 6, 7, 8, 9

9. What effect does early grade retention have on later academic success of students who were retained in the early grades?

Course Rigor
Need Elements 1, 3, 6, 7

10. What 8th grade achievement levels indicate that a student is well prepared to succeed in challenging courses in high school?
11. Have students taken the coursework to prepare them for college and work — both in years of study and rigor of content?
12. What evidence exists that students who take and pass the courses have learned the course content?

Sustaining Enrollment in Early Grades
Need Elements 1, 2

13. What students are being lost in transition between middle and high school?
14. What proportion of the students who enter elementary school maintain continuous enrollment and complete 8th grade in a timely manner?

Consistently High-Performing Schools
Need Elements 1, 6

15. Which elementary and middle schools in the state are consistently highest-performing in preparing different student populations for high school?

College Preparation
Need Elements 1, 3, 6, 7, 8, 9

16. Are the students academically prepared to graduate from high school and enter college?

High School Indicators of College Preparedness

Need Elements 1, 3, 7, 9

17. What high school achievement levels indicate that a student is college and work ready?

18. Are students academically prepared to enter college and complete their program or degree in a timely manner?

19. What is the relationship between students' performance on state assessments (high school exit exam, end-of-course exams) and subsequent postsecondary performance and graduation?

College Remediation

Need Elements 1, 8, 9

20. What percentage of high school graduates who go on to college take remedial courses?

High School Completion Rates

Need Elements 1, 2, 8

21. What proportions of the students who enter 9th grade maintain continuous enrollment and complete their high school requirements in a timely manner?

High Performing Schools: College Preparation of Subgroups

Need Elements 1, 2, 3, 7, 9

22. Which high schools in the state are consistently highest-performing in preparing different student populations for college and work?

Academic Growth by Prior Performance Subgroup

Need Elements 1, 2, 3, 7

23. Which high schools produce the strongest academic success for initially poorly-prepared students, and for initially well-prepared students?

College Success of K–12 Students

Need Elements 1, 9

24. In what content areas do students require remediation?

25. What are the retention and degree completion rates of students who are placed in remedial coursework?

Dual Enrollment

Need Elements 1, 6, 7, 9

26. How do dual-enrollment and advanced placement programs in high school affect students' success in college?

Graduation Rates by Subgroup and Prior Performance

Need Elements 1, 2, 3, 8

27. Which institutions are doing the best job of graduating students on time, based on those students' prior preparation and level of economic disadvantage?

Teacher Effectiveness and Preparation Programs

Need Elements 1, 3, 4, 5

28. Which teacher preparation programs produce the graduates whose students have the strongest academic growth?

NGA Graduation Rate

Need Elements 1, 2, 8, 10

The 10 Essential Elements are:

1. *A unique statewide student identifier that connects student data across key databases across years*
2. *Student-level enrollment, demographic and program participation information*
3. *The ability to match individual students' test records from year to year to measure academic growth*
4. *Information on untested students and the reasons they were not tested*
5. *A teacher identifier system with the ability to match teachers to students*
6. *Student-level transcript information, including information on courses completed and grades earned*
7. *Student-level college readiness test scores*
8. *Student-level graduation and dropout data*
9. *The ability to match student records between the P–12 and postsecondary systems*
10. *A state data audit system assessing data quality, validity and reliability*

Appendix B: "Killer Questions" Template

Source: New Mexico Office of Education Accountability

This template can be used by stakeholders representing both policy and data to bridge their traditionally siloed work and begin a conversation about data use in their states. The questions listed below are examples. A more comprehensive template is found at http://dataqualitycampaign.org/resources/447.

Question Type	Data Questions	Policy Questions	Political Questions
Policy Elements	Data for Advocacy and Accountability	Statute, Regulation, Standards, Frameworks, Budget	Power Groups, Practices & Behaviors
Example 1	• What percentage of students score proficient or above on achievement tests in math or reading? • What are the achievement gaps among different groups of students?	• How should the certification requirements for teachers be strengthened? • What kinds of instructional interventions should be implemented? • How will these reforms and interventions be funded and where will the money come from?	• Who has the influence to change how teachers are prepared? • What groups control professional development? • Who controls where the most effective teachers and principals are placed? • Who evaluates the teachers? • Who can change how resources are allocated?
Example 2	• What percentage of ninth graders enter college four years later? • What percentage of high school graduates take remedial courses in college?	• What changes do we make in high school standards and teacher training to ensure that more students graduate ready to succeed in college? • What statutory changes should be enacted to better align the curriculum between high school and college? • How will these initiatives be funded and where will the money come from?	• Who has the influence to change practices and behaviors in high school? • Who has the power to get colleges and high schools to talk to one another? • Who has the influence to get high schools and colleges to cooperate rather than compete for limited resources?

Appendix C: South Carolina's Critical Policy Questions

South Carolina took each of its prioritized questions and began a process that included rewording the questions and tagging each with categories, topics, subtopics and keywords. Following are draft materials supplied by the South Carolina Department of Education. The materials are not final.

Category(ies)	Topic(s)	Sub-Topic(s)	Keywords	Original QUESTIONS for Data Warehouse	New and Reworded Questions
Students	Enrollment	AP	AP Enrollment Grade-level School-level District-level State-level	15. What is the Advanced Placement (AP) enrollment?	15. What is the enrollment in AP classes per grade per school per district per state? What are the subgroups enrollments in AP classes per grade per school per district per state?
Students	Enrollment, Test Results	AP Course Grades	AP Students Course-Grades	16. What is the Advanced Placement (AP) enrollment by test scores?	16. What are the course grades for students enrolled in AP courses?
Educators, Students	Performance	Student Performance	Teacher Student Student-Roster Course-Grades Student-Attendance Student-Absence Student-Tardies Discipline	51. What is the teacher to student connection (available to districts, if not LEAs)?	51. Provide teacher rosters showing only students registered for an individual teacher's courses/classes. Provide course-grades, absences, tardies, disciplinary actions, as of last data collection.
Administration	School, District, State	Capacity Planning	Student-Enrollment Actual-Enrollment Enrollment-Projections Projected-Enrollment Enrollment-Trends School-Enrollment District-Enrollment State-Enrollment	55. Enrollment reports: projections, numbers, student demographics	55. Provide school-, district-, and state-level enrollment reports with current and future projections. Include student demographics. Base projections on history and available trend information. Provide subtotals within each level of projection (demographics within grade-level within school; demographics within grade-level & school & district; demographics within grade-level & school & district & state). Provide flexibility to see desired level only. Provide drill-down capabilities.

Category	Topics	Sub-Topics								
Administration	Leadership	Staff Mobility	School Profile	District Profile	State Profile	Student Mobility	Aggregate Student Performance	Drop Out Rate		
	District	Curriculum	Goals	Leadership Issues	Climate	Priority Schools	Drop Out Rate	Capacity Planning		
	School	Curriculum	Goals	Leadership Issues	Climate	Priority Schools	Drop Out Rate	Capacity Planning		
	State	Curriculum	Goals	Leadership Issues	Climate	Priority Schools	Drop Out Rate	Capacity Planning		
	Program Effectiveness	Goals	Programs	AP	IB	Reading First				
	Staff Mobility	Programs	Principals	Teachers	Frequency	Attrition	Retention			
Educators	Certifications	HQ	Professional Development	Credentials	ADEPT	Technology Proficiency				
	Mobility	Recruitment	Retention	Tenure	Attrition					
	Performance	Student Performance	Teacher Attendance	IGP Completion Rate	Attendance	Vacancies	Indicators			
Students	Achievement	Test Results (PACT, HSAP)	Goals	Assistance	Gifted & Talented	Programs	Indicators	Student Groups	Patterns	
	Adult Ed	GED								
	Attendance	Truancy	Tardiness	Absences	Home Bound					
	Career Assessments	Individual Graduation Plan	College Choice							
	Demographics	Socioeconomic	Gender	Ethnicity	Age					
	Discipline	Absentee	Patterns	Suspensions	Expulsions	Interventions	Referrals			
	Enrollment	Registered Students	No Shows	Exiting Students	AP	IB	Projections			
	Graduation	Areas of Study	Post-Grad Plans	Rates/ Reasons						
	Mobility	Exiting Students	Entering Students	Classroom	School	District				
	Participation	Programs (AP, IB)	Courses Completed	Course Grades	Extracurricular Activities	School Choice	Extended Learning	Certifications	Indicators	Charter Schools
	Performance	Retention	Drop-Outs	At-Risk Models	Course Grades					
	Test Results	PACT / PASS	HSAP	EOCEP	Local Diagnostics	SC-Alt	ELDA	Other Tests	Course Grades	Student Groups

South Carolina further tagged each topic by types of users and identified the type and level of data each would be able to access to ensure student privacy.

	STATE		DISTRICT		SCHOOL				
TOPICS*	**SEA Top Level (S1)**	**Other SEA Staff (S2)**	**LEA Top Level (L1)**	**Other LEA Staff (L2)**	**Principal (P1)**	**Guidance (G1)**	**Classroom Teacher (C1)**	**Subject/ Program Coordinators (U1)**	**Other School Staff (U2)**
Adult Ed	✓	A	✓	A	✓	✓	✓	✓	A
District Performance	✓	A	✓	A	✓	✓	✓	✓	A
Graduation	✓	A	✓	A	✓	✓	✓	✓	A
Post-Secondary	✓	A	✓	A	✓	✓	✓	✓	A
Program Effectiveness	✓	A	✓	A	✓	✓	✓	✓	A
School Performance	✓	A	✓	A	✓	✓	✓	✓	A
Staff Mobility	✓	A	✓	A	✓	✓	✓	✓	A
Student Achievement	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Attendance	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Career Assessments	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Demographics	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Discipline	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Enrollment	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Mobility	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Participation	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Performance	✓	A	✓	A	✓	✓	✓◆	✓	A
Student Test Results	✓	A	✓	A	✓	✓	✓◆	✓	A
Teacher Certifications	✓	A	✓	A	✓	✓	✓	✓	A
Teacher Performance	✓	**A**	✓	**A**	✓	**A**	**A**	✓	**A**
* See Glossary for definitions of Topics	All data; Includes IT	Same as Public; Aggregate Only	Student-level by class & above	Same as Public; Aggregate Only	Student-level by class & above	Student-level by class & above	Only Students in classes		Same as Public; Aggregate Only

✓	Student-level Data
A	Aggregated Data Only
A	Limited Access
✓◆	Limited to Students In Teacher's Classes
I & A	Individual & Aggregate Data

Appendix D: Survey of DQC Partners on Critical Questions for States

There is a demonstrated need for some consensus across stakeholders as to the *critical policy questions* that would best drive the development of state data systems linking P–20 and workforce data and simultaneously inform efforts to develop tools and resources that support these state-level efforts (e.g., common data standards).

States such as New Mexico and South Carolina have put tremendous effort into researching and identifying critical questions. Following their example and as a response to increasing state requests on this issue, the DQC pulled together questions from these and other states and compiled a list of 57 that we hear discussed the most (see pages 12–15). We then asked our state and national partners to rate them as high, medium or low priority.

HIGH: These questions are *critical* to improving student achievement, and statewide data systems *must* be able to answer them *as soon as possible.*

MEDIUM: These questions are *important* to improving student achievement, and statewide data systems *need to* be able to answer them *in the near future.*

LOW: These questions are *related* to improving student achievement, and statewide data systems *should* be able to answer them *at some point.*

The results represent the views of *only* the 24 partners/states that completed the survey and should be viewed within that narrow context. The DQC primarily works with organizations that prioritize issues that are the responsibility of state education agencies and center most around K–12; therefore, the results reflect a higher priority on these issues, and the respondents placed a lower priority on workforce, early childhood and postsecondary-related questions.

This survey primarily serves as an example of how to identify and prioritize the questions that are most important to your state. Because our partners (e.g., National Governors Association, Council of Chief State School Officers, State Higher Education Executive Officers, etc.) are representative of the stakeholders that should be at the table in your state, use these questions as a beginning to bring together your stakeholders and have them similarly rate the questions and add new questions that may not be part of the initial list. Once you have a set list of questions, we encourage you to further the conversation using the resources identified elsewhere in this paper (e.g., "Killer Questions" Template, *Measuring the Education Pipeline,* etc.) to help your policymakers and data managers determine how to best build a data system that answers the identified questions in a prioritized manner.

DQC Critical Policy Questions Survey Results

K–12

Teachers

1. What is the distribution of effective teachers and principals in the state?

High	Medium	Low
61%	26%	13%

2. What percent of students are taught by HQT teachers? Effective teachers?

High	Medium	Low
48%	39%	13%

3. How are HQT teachers distributed among and within schools? Effective teachers?

High	Medium	Low
64%	27%	9%

4. How does the percentage HQT teachers relate to student success? Effective teachers?

High	Medium	Low
87%	9%	4%

5. How can teacher preparation and professional development be improved so that all teachers are effective?

High	Medium	Low
65%	22%	13%

6. Which institutions consistently produce more effective teachers and what are the program components that are most linked to effective teachers?

High	Medium	Low
83%	13%	4%

7. What is the value-add of advanced teacher education (i.e., advanced degrees) in terms of student achievement?

High	Medium	Low
30%	43%	26%

8. What is the value-add of educator professional development in terms of student achievement?

High	Medium	Low
52%	35%	13%

Achievement

1. What percentage of students in all subgroups score proficient or above on achievement tests in math and reading?

High	Medium	Low
70%	17%	13%

2. Are students achieving at least one year's academic growth every year?

High	Medium	Low
74%	22%	4%

3. What 8th grade achievement levels indicate that a student is well prepared to succeed in challenging courses in high school?

High	Medium	Low
70%	26%	4%

4. What evidence exists that students who take and pass the courses have learned the course content?

High	Medium	Low
52%	26%	22%

5. What is the percentage of high school graduates that complete Algebra II or equivalent?

High	Medium	Low
43%	52%	4%

6. Which elementary and middle schools in the state are consistently highest-performing in preparing different student populations for high school?

High	Medium	Low
39%	48%	13%

7. Which elementary and middle schools produce the strongest academic growth among initially poorly-prepared students, and among initially well-prepared students?

High	Medium	Low
78%	13%	9%

8. What achievement levels in grades 3–7 indicate that a student is "on track" for later success?

High	Medium	Low
70%	26%	4%

9. Which high schools produce the strongest academic success for initially poorly-prepared students and for initially well-prepared students?

High	Medium	Low
83%	13%	4%

10. How are students performing on college prep tests including ACT, SAT, AP?

High	Medium	Low
61%	30%	9%

At Risk

1. What are the indicators that serve as early warning that students are at risk of dropping out?

High	Medium	Low
83%	13%	4%

2. What percentage of schools serving a significant at-risk population has demonstrated success as determined by graduation rate?

High	Medium	Low
52%	35%	13%

3. What students are being lost in transition between middle and high school?

High	Medium	Low
74%	22%	4%

4. What dropout intervention strategies are in use and how are they being assessed for effectiveness?

High	Medium	Low
57%	39%	4%

5. What is the graduation and dropout rate by subgroup?

High	Medium	Low
70%	22%	9%

6. What effect does early grade retention have on later academic success of students who were retained in the early grades?

High	Medium	Low
30%	48%	22%

Other

1. What percentage of students is properly immunized?

High	Medium	Low
22%	26%	52%

2. What is the absentee rate in each school?

High	Medium	Low
39%	48%	13%

3. What percentage of students received vision/hearing screenings in school?

High	Medium	Low
13%	43%	43%

4. What can we determine about student achievement by analyzing discipline data?

High	Medium	Low
17%	70%	13%

5. What is the amount and source of funds going to economically disadvantaged students? ELL students? Schools not meeting AYP?

High	Medium	Low
46%	38%	17%

Early Childhood Linkage

1. To what degree does participation in early childhood programs (e.g., Head Start, Early Head Start, state Pre-K, etc.) increase kindergarten readiness? Are these gains sustained through third grade? Do results vary by race/ethnic and/or socio-economic groups?

High	Medium	Low
61%	30%	9%

2. What is the impact of universal state pre-K on students' kindergarten readiness? Are these gains sustained through the third grade?

High	Medium	Low
43%	43%	13%

3. Does participation in early childhood programs improve student future achievement (e.g., scoring proficient or above on state exams, graduation, enrollment in postsecondary education, etc.)?

High	Medium	Low
58%	29%	13%

4. Which early childhood programs are doing the best preparing students for kindergarten, based on those students' prior preparation and level of economic disadvantage?

High	Medium	Low
54%	33%	13%

5. How does the length of enrollment in early childhood program(s) affect kindergarten readiness and future achievement?

High	Medium	Low
30%	57%	13%

Postsecondary Linkage (questions in bold also include workforce linkage)

1. How many of our state's high school graduates need remediation in college? What is the college-completion rate for these students?

High	Medium	Low
83%	17%	0%

2. What is the college going rate for our high school graduates? College completion?

High	Medium	Low
83%	8%	8%

3. To what degree do our state financial aid programs improve college access?

High	Medium	Low
43%	39%	17%

4. What high school performance indicators (e.g., enrollment in rigorous courses or performance on state tests) are the best predictors of students' success in college or the workplace?

High	Medium	Low
83%	9%	9%

5. Do students who earn college credit in high school more likely to go to college? Are they more likely to graduate from college on-time?

High	Medium	Low
48%	43%	9%

6. Have students taken the coursework to prepare them for college and work — both in years of study and rigor of content?

High	Medium	Low
65%	35%	0%

7. What is the relationship between students' performance on state assessments (high school exit exam, end-of-course exams) and subsequent postsecondary performance and graduation?

High	Medium	Low
65%	30%	4%

8. Which high schools in the state are consistently highest-performing in preparing different student populations for college and work?

High	Medium	Low
61%	26%	13%

9. How do dual-enrollment and advanced placement programs in high school affect students' success in college and the workplace?

High	Medium	Low
59%	36%	5%

10. Which institutions are doing the best job of graduating students on time, based on those students' prior preparation and level of economic disadvantage?

High	Medium	Low
61%	26%	13%

11. What changes in curriculum and teacher training will reduce the need for remediation?

High	Medium	Low
57%	39%	4%

12. Do patterns in course taking result in success on state graduation tests and college entrance exams?

High	Medium	Low
57%	35%	9%

13. Where do our students go after high school?

High	Medium	Low
74%	22%	4%

14. Does our state scholarship program increase student participation in postsecondary education within the state? How many attend out-of-state institutions with state scholarships?

High	Medium	Low
50%	38%	13%

15. What percentage of 9th graders enter college four years later?

High	Medium	Low
70%	26%	4%

Workforce Linkage

1. What percentage of our high school graduates (who haven't obtained a college credential) continue to live and work in our state?

High	Medium	Low
61%	26%	13%

2. What percentage of our high school graduates, including those who earned GEDs, has some postsecondary education? On average, how many more credits do these individuals need to obtain postsecondary credentialing?

High	Medium	Low
65%	22%	13%

3. What percentage of our workforce population return to postsecondary education for additional training, but without earning a credential?

High	Medium	Low
52%	39%	9%

4. What percentage of our college graduates continue to live and work in our state?

High	Medium	Low
65%	17%	17%

5. How much do our high school and college graduates earn in the workforce over time? What about our drop-outs?

High	Medium	Low
65%	30%	4%

6. How many of our high school and college students are employed while they are in school and what kind of impact does it have on their academic success?

High	Medium	Low
35%	39%	26%

7. Which industries employ the majority of our state's high school and college graduates?

High	Medium	Low
64%	27%	9%

8. How do we strengthen the relationship between education and the economy?

High	Medium	Low
57%	30%	13%

Appendix E: Policy and Practitioner Questions Using Early Childhood Data

The following list is based on a series of "killer questions" generated at a July 2009 Early Childhood Data Working Meeting that was convened by the Early Childhood Data Collaborative (ECDC),* subsequent presentations of the questions and collective knowledge of the ECDC. The questions are loosely organized by stakeholder group (policymakers and practitioners) and offer examples of data that could be collected and used to answer the questions. This group is currently working to refine and validate the questions and related data elements.

Question that resonates with state policymakers	Question that resonates with early childhood practitioners	Examples of data needed to answer these questions
Are children, birth through age 5, on track to succeed at school entry?	How well are young children progressing in all aspects of development from birth to 3rd grade? Who are the children making the most progress?	Data on all children disaggregated by: • Risk factors — race, income, dual language learners, single parents, unemployed parents, etc. • Age — 0–2, 3–5, kindergarten entry, 3rd grade Data on child demographics linked to measures of developmental progress: • Social/emotional, physical, cognitive, linguistic, approach to learning (or knowledge, skills and behavior)
Which children have access to high-quality early care and education programs?	Where are the children receiving services? Are we meeting the needs of at-risk children? Where are the programs that offer services? Who are the providers? What is the quality of the programs?	Data elements from above linked to: • Dosage data — how many hours per day, days per week, years is the child receiving (not the program offered) • Program location — number of slots/supply by setting • Provider characteristics — age, ethnicity, language, educational level, certification/credential, experience in the field • Quality standards (research-based, statewide) that include — program standards, teacher standards, child outcomes (early learning standards or guidelines) or developmental benchmarks
Is the quality of the programs improving?	What program characteristics are associated with positive outcomes? How well are various types of programs and local agencies improving outcomes for different types of children?	Data elements from above linked to program characteristics and tracked over time. Examples of program characteristics include: • Structural measures — teacher or care provider/child ratio, class size, teacher credential • Quality measures — Quality Rating & Improvement System rating, environmental safety rating or score, consistent use of curriculum, Classroom Assessment Scoring System score
What is the cost per child of a high-quality program?	What public and private funds are spent on early care and education programs? What proportion of state funding is being spent on high-quality programs?	Data on program quality linked to cost information, such as: • State expenditures • Long- and short-term cost savings: special education costs, retention, remediation, dropout prevention
What policies and investments lead to a skilled and stable early care and education workforce? How prepared is the workforce to provide effective education and care for all children?	What practices and policies best build and sustain the early childhood workforce necessary for quality early childhood education programs that promote positive child outcomes? Do all providers and teachers (or all members of the workforce) have access to appropriate education and ongoing professional development?	Data elements for workforce: • Compensation • Benefits • Retention • Professional preparation and ongoing professional development (degree, what degree in, practicum, mentoring) • Data linked back to workplace and working conditions at the workplace (including turnover rates) Data elements for the professional development system: • Noncredit, associate, bachelor's, master's programs available • Content and structure of the program — curriculum, practicum, student supports • Faculty characteristics

**A partnership of the Council of Chief State School Officers • Center for the Study of Child Care Employment at UC Berkeley • Data Quality Campaign • National Center for Children in Poverty • National Conference of State Legislatures • National Governors Association Center for Best Practices • Pre-K Now at the Pew Center on the States*

DATA QUALITY CAMPAIGN

Using Data To Improve Student Achievement

www.DataQualityCampaign.org

The **Data Quality Campaign (DQC)** is a national, collaborative effort to encourage and support state policymakers to improve the availability and use of high-quality education data to improve student achievement. The campaign will provide tools and resources that will help states implement and use longitudinal data systems, while providing a national forum for reducing duplication of effort and promoting greater coordination and consensus among the organizations focused on improving data quality, access and use.

Managing partners of the Data Quality Campaign include:

- Achieve, Inc.
- Alliance for Excellent Education
- Council of Chief State School Officers
- Education Commission of the States
- The Education Trust
- National Association of State Boards of Education
- National Association of System Heads
- National Center for Educational Achievement
- National Center for Higher Education Management Systems
- National Conference of State Legislatures
- National Governors Association Center for Best Practices
- Schools Interoperability Framework Association
- State Educational Technology Directors Association
- State Higher Education Executive Officers

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- 3 Rivers Connect
- Academy for Educational Development
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- American Association of Colleges for Teacher Education
- American Association of Community Colleges
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- American Board for Certification of Teacher Excellence
- American Federation of Teachers
- American Productivity and Quality Center
- American Society for Quality
- American Youth Policy Forum
- Arise Citizens' Policy Project
- Association for Career and Technical Education
- Business Higher Education Forum
- Campaign for High School Equity
- Center for Public Policy Priorities
- Center for Teaching Quality
- College Summit
- Complete College America
- Consortium for School Networking
- Educational Policy Institute
- ETS
- Forum for Youth Investment
- Foundation for Excellence in Education
- Great Schools
- Institute for a Competitive Workforce *(An Affiliate of the U.S. Chamber of Commerce)*
- Institute for Educational Leadership
- Institute for Higher Education Policy
- International Association for K–12 Online Learning
- James B. Hunt, Jr. Institute for Educational Leadership and Policy
- Jobs for the Future
- Knowledge Alliance
- League of Education Voters Foundation
- Learning Point Associates
- Maine Center for Economic Policy
- Midwestern Higher Education Compact
- Military Child Education Coalition
- National Alliance for Public Charter Schools
- National Association for the Education of Young Children
- National Association of Early Childhood Specialists in State Departments of Education
- National Association of Secondary School Principals
- National Association of State Directors of Teacher Education and Certification
- National Association of State Workforce Agencies
- The National Center for Public Policy and Higher Education
- National Council for Accreditation of Teacher Education
- National Council on Teacher Quality
- National Math and Science Initiative
- National School Boards Association
- National Staff Development Council
- National Student Clearinghouse
- Nebraska Appleseed Center for Law in the Public Interest
- New England Board of Higher Education
- Northwest Evaluation Association
- PathWays PA
- Pathways to College Network
- Pell Institute
- Policy Innovators in Education Network
- Postsecondary Electronic Standards Council
- Pre-K Now
- Public Education Network
- Roads to Success
- Southern Regional Education Board
- Statewide Poverty Action Network
- The Workforce Alliance
- Thomas B. Fordham Institute
- Western Interstate Commission for Higher Education
- The Working Poor Families Project