Appendix J:

10 Essential Elements Critical to Longitudinal Data Systems: How California Stacks Up

Created by The National Center for Educational Achievement (NCEA) and the Data Quality Campaign

The following information is from the 2007 NCEA Survey of State P–12 Data Collection Issues Related to Longitudinal Analysis. For more information, visit www.DataQualityCampaign.org.

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 higher education systems
10. A state data audit system assessing data quality, validity and reliability

1. A unique statewide student identifier that connects student data across key databases across years

(California has this element; 45 states have this element)

A unique statewide student identifier is a single, non-duplicated number that is assigned to and remains with a student throughout his or her P–12 career. Assignment of a unique statewide student identifier to every student in the P–12 system provides a way to follow students as they move from grade to grade and across campuses and/or districts within the state.

A statewide student identifier can help policymakers and educators know, among other things:

- The academic value-added of a school or program.
- The achievement levels in early grades that indicate that a student is on track to succeed in subsequent grades.
- The test scores in early grades which should be thresholds for intervention.

2. Student-level enrollment, demographic and program participation information

(California has this element; 46 states have this element)

Accurate information on student enrollment, demographics, and program participation (e.g., student participation in special education or the free and reduced price lunch program, the most common indicator of student poverty status) is essential to evaluate the effects of schools and programs, and to assess the impact of student mobility and continuous enrollment on learning.

With student-level enrollment, demographic and program participation information, policymakers and educators will know:

- The extent to which free and reduced price lunch enrollment drops off in high school and how that might affect measures of each high school's poverty rate.
- How the percentage of minority students in gifted and talented programs compares with that of white students.
- The rate at which English language learners are entering the state for the first time in high school and how are they doing on the state's high school exit exams.

3. The ability to match individual students' test records from year to year to measure academic growth

(California does not have this element; 44 states have this element)

A statewide database of individual student performance on state exams (and state-mandated local exams) should be maintained with the ability to disaggregate the results by individual item and objective, in order to provide good diagnostic information to teachers. Though most states do have annual test records for individual students, only some of these states have created the ability to match records for individual students across time and with other databases (e.g., enrollment, course completion, and graduation databases).

With the ability to match individual student test records across years to follow student progress, policymakers and educators will know (by grade and subject):

- The percent of last year's below proficient students who met the state's proficiency standard this year.
- Whether or not proficient and advanced students are achieving at least a year's growth every year.

4. Information on untested students and the reasons they were not tested

(California has this element; 33 states have this element)

States need to go further than tracking students who do not take the test to find out why they are not tested and then match those records to separate enrollment and program participation databases. This makes it possible to identify patterns associated

with specific student populations (e.g., special education students or English language learners) and ensure that all students are held to high expectations.

With information on untested students, policymakers and educators will know:

- Which students were not tested by grade and subject and why.
- Trends over time in the number and percentage of untested students from each student group (English language learners, special education students, different ethnic groups, etc.).
- Whether or not particular schools and districts have excessive absences on test day or questionable patterns of absences and exemptions across years (these measures can be used in a state's data audit system to ensure data quality).

5. A teacher identifier system with the ability to match teachers to students

(California is working on this element; 15 states have this element)

Many states collect data on teacher education and certification, but matching teachers to students by classroom and subject is critical to understanding the connection between teacher training and qualifications and student academic growth. Collecting this data makes it possible to identify which students and which courses are being taught by teachers with different levels and types of preparation or certification, and which forms of teacher training and certification have the greatest impact on students' academic growth in the classroom.

With a teacher identifier and the ability to connect teacher and student data, policymakers and educators will know:

- The teacher preparation programs that produce graduates whose students have the strongest academic growth.
- How the experience levels of the teachers in the district's high-poverty schools compare with those of teachers in the schools serving affluent students, and how these experience levels are related to the academic growth of the students in their classrooms.
- The relationship between the performance of the district's low-income students on the state algebra exam and teacher preparation in that subject.

6. Student-level transcript information, including information on courses completed and grades earned

(California does not have this element; 12 states have this element)

Many states are encouraging students, particularly low-income and minority students, to take rigorous courses in high school so that they are better prepared for success in postsecondary education and the job market. In most states, however, course taking data is not collected at the state level, making it impossible to monitor the impact of these policies. To fill in the missing information, states should collect student-level transcript information from middle and high school, including courses taken and grade earned.

With student-level transcript information, policymakers and educators will know:

- The number and percent of students who are enrolling in and completing rigorous courses in high school, disaggregated by ethnicity and income status.
- The middle schools that are doing the best job of preparing students for rigorous courses in high school.
- Whether or not students in more rigorous courses in high school have been more successful in college or in the workplace.

- Whether or not there is evidence of grade inflation (e.g., students with the same test scores receive dramatically higher grades in the same course in certain schools or districts.)

7. Student-level college readiness test scores

(California does not have this element; 10 states have this element)

To ensure that students make a successful transition from high school to postsecondary education, it is important for states to collect and report student performance data on college admissions, placement and readiness tests. Student performance on SAT, SAT II, ACT, Advanced Placement (AP) and International Baccalaureate (IB) exams are important indicators of students' college readiness; states should collect and report this data on an annual basis.

With student-level college readiness test scores, policymakers and educators will know:

- How participation rates and scores on SAT, ACT, AP and IB exams change over time for low-income and minority students.
- The percent of students who meet the proficiency standard on the state 8th grade test who also take AP or IB courses in high school and pass the corresponding AP or IB exams.
- The percent of low-income students who met the proficiency standard on the state high school test who take the SAT and ACT exams and score at college readiness benchmark levels on those exams.

8. Student-level graduation and dropout data

(California does not have this element; 41 states have this element)

A majority of states currently collect annual records on individual graduates and dropouts, but to calculate the graduation rates defined in the new National Governors Association compact, states need to be able to track individual students over time.

The calculation of accurate graduation rates also requires the ability to accurately account for what happens to students who leave public education. For example, states must be able to distinguish correctly between departing students who drop out or get a GED from students who transfer to another school.

With good graduation and dropout data in place and the ability to match records to other databases, policymakers and educators will know:

- When and why students leave the state's public education system.
- The percent of first-time 9th graders in a given year who graduate from high school within four, five, or six years.
- The schools and school systems that are doing the best job reducing the dropout rate.
- The characteristics of high school dropouts and whether or not there are early warning signs that schools can look for in elementary and middle school.

9. The ability to match student records between the P–12 and higher education systems

(California does not have this element; 18 states have this element)

As states and school systems work to align expectations in high school with the demands of postsecondary education, they need better data on student success when they leave the P–12 system and enter college. Most states today do not have data systems that enable this two-way communication.

With the ability to match student records between P–12 and higher education systems, policymakers and educators would know:

- The percentage of each district's high school graduates who enrolled in college within 15 months after graduation.
- The percentage of last year's graduates from each high school or school district who needed remediation in college and how these percentages varied by student income and ethnicity.
- The percentage of students who met the proficiency standard on the state high school test and still needed remediation in the same subject in college.
- How the students' ability to stay in and complete college is related to their high school courses, grades and test scores.

10. A state data audit system assessing data quality, validity and reliability

(California has this element; 37 states have this element)

Invalid or unreliable reporting by some schools and districts is a problem in a number of states, and this problem is likely to continue in the absence of checks on the accuracy and quality of the data submitted by schools and districts. Without a well-designed and well-implemented state data audit system, the public cannot have confidence in the quality of the information coming out of the state's public education system.

With a robust data audit system in place, policymakers and educators will know:

- Whether or not the disaggregated student information used to rate schools for Adequate Yearly Progress (AYP) is valid.
- The districts that do the best job of reporting valid and reliable dropout data.
- Whether or not districts are reporting their numbers of untested students and reasons for not testing the students.
- The amount and type of data quality problems identified by districts and how those problems are being addressed.