



**Forum Data Model Task Force  
Data Needs Survey Summary  
8/4/2006**

*National Forum on Education Statistics  
Sponsored by the National Center for Education Statistics*

## Introduction

The Data Needs Questionnaire is the one step in gathering input from stakeholders around the comprehensive data model. To date, expert focus groups have been conducted. More focus groups and other kinds of input will be gathered.

In attempting to model a content domain it is important to have a balanced approach to the conceptual development. A purely theoretical approach will lack a basis in reality and will probably not serve the needs of stakeholders. A data collection such as the Data Needs Questionnaire provides an opportunity for input. However, in order to make sense of the information gathered, there must be the beginnings of a conceptual framework to make sense of the information collected.

The conceptual framework developed in Phase I of this project has provided a starting point or "spine" for the framework. This existing framework was used to organize the hundreds of data points collected by the questionnaire. As the analysis proceeded other concepts and variation of detail were uncovered. These additional concepts are presented here and are meant to inform the overall conceptual development of the data model.

## Summary of Findings

This data collection and analysis revealed a different categorization than before for data elements deemed important by the respondents to the questionnaire.

Data needs could be sorted into the following categories:

- Demographics
- Person Characteristics
- Assessment
- Program Participation
- Competencies
- Standards and Predicted Performance
- Outcomes
- School/District/State Characteristics

Most data needs involved assessment information, outcome information such as graduation results or drop out results, and competency information such as student computer literacy or teacher certification level.

In addition to the central measure, most questions required additional information such as demographics, program participation, school attendance, course information, and teacher information in order to fully answer the question.

Longitudinal tracking of students is essential in answering the information needs of respondents. Most questions centered upon student performance over time, student performance and characteristics, and school performance and characteristics.

## Method

Of the Data Needs Questionnaires distributed, 18 usable responses were collected. The questionnaire asked respondents to list important education questions of two different types. The first type of questions were important questions that school systems should be able to answer with existing and future information systems. The second type of questions were important questions that should be answered in order to inform instruction.

Following are the question types as stated in the questionnaire with the number of questions submitted by the respondents.

Question Type 1: "What are the top questions I/we ought to be able to answer in our state, district and/or school with existing/future data systems?"

133 questions submitted.

Question Type 2: What are the top questions that need to be answered to inform instruction?

123 questions submitted.

After the respondents listed a question, they were asked to further describe the question by listing the data elements needed to answer each question. They were also asked, among other things, to list the data element definitions related to the data elements.

Two of the data points submitted by respondents were analyzed in detail: (1) The actual question, and (2) The data elements needed to answer the question. The analysis uses descriptors of questions and data elements in order to represent meaningful threads in the data collected.

Descriptors were developed and assigned in three passes through the data. Preliminary descriptors were developed in a first reading of the questions. The descriptors were validated, extended and revised in a second pass. Descriptors were then assigned to questions as well as data elements, and further revised in a third pass.

## Question Descriptors

From the responses for both question type 1 and question type 2, the following descriptors were developed for the questions that respondents provided.

Questions submitted by respondents were assigned to one or more of the following descriptors:

- Student Progress Over Time
- Student Performance and Characteristics
- Program/Plan Performance
- Course of Study Effectiveness
- Teacher Performance and Characteristics
- School Performance and Characteristics
- LEA Performance and Characteristics
- State Performance and Characteristics
- Parent/Community

To illustrate each descriptor, example questions submitted by respondents are listed below.

### Student Progress Over Time

- How does participation in advanced high school courses affect college success?
- What is the difference in the achievement gap between subgroups from one year to the next?
- How do cohorts perform longitudinally?

### Student Performance and Characteristics

- How many (and which) students are performing at above average, average, and below average in reading, math, science and a nationally normed test?
- What are the specific writing skill deficiencies of incoming 6th or 9th graders?
- What is the attendance rate, discipline record and achievement of students participating in co-curricular or community based activity?

### Program/Plan Performance

- What percentage of 9th-grade students participating in remedial reading programs obtained their high school diploma?
- Did a Safety Net program work with the student prior to dropping out?
- Is our student assignment plan being followed?

### Course of Study Effectiveness

- How many students are graduating with the Commonwealth Scholars Initiative core course of studies?
- How does participation in advanced high school courses affect college success?
- Which educational programs/curriculum choices make the most difference with respect to student achievement?

### Teacher Performance and Characteristics

- Which teacher preparation programs produce the graduates whose students have the strongest academic growth?
- Are teachers, by school, teaching content in their major or minor area of study?
- Is there a relationship between Professional Development (PD) and student performance?

### School Performance and Characteristics

- Are specific school characteristics, such as instructional program, teacher qualifications, size, or attendance rates associated with success in narrowing achievement gaps over time?
- What is the mobility rate of students at each school?
- In which subject areas did the school as a whole do well, not do well?

### LEA Performance and Characteristics

- What is the general fund allocation per student? Categorical funding per student? Total funding per student? Dollars spent on instruction?
- How is our district doing with respect to AYP?
- Which districts are showing a decrease in enrollment, by subgroup?

### State Performance and Characteristics

- Which states are not making AYP?
- What is the impact of the growth model on whether a state makes AYP?
- Is the percent of ‘highly qualified staff’ increasing in each state?

### Parent/Community

- What is the involvement of parents, particularly on parent conference day(s)? PTA membership?
- What are the public library offerings to students?
- Do students do homework at home?

## Question Descriptor Results

Table 1 below shows the number of times a question descriptor was used by question type. Each question could have one or more descriptor attached. Figure 1 and Figure 2 depict the same information in a graphical form.

Table 1

Descriptor	Question Type 1	Question Type 2
Student Progress Over Time	19	16
Student Performance and Characteristics	28	40
Program/Plan Performance	20	12
Course of Study Effectiveness	7	14
Teacher Performance and Characteristics	18	26
School Performance and Characteristics	37	14
LEA Performance and Characteristics	16	4
State Performance and Characteristics	9	2
Parent/Community	2	4

Figure 1: Question Type 1

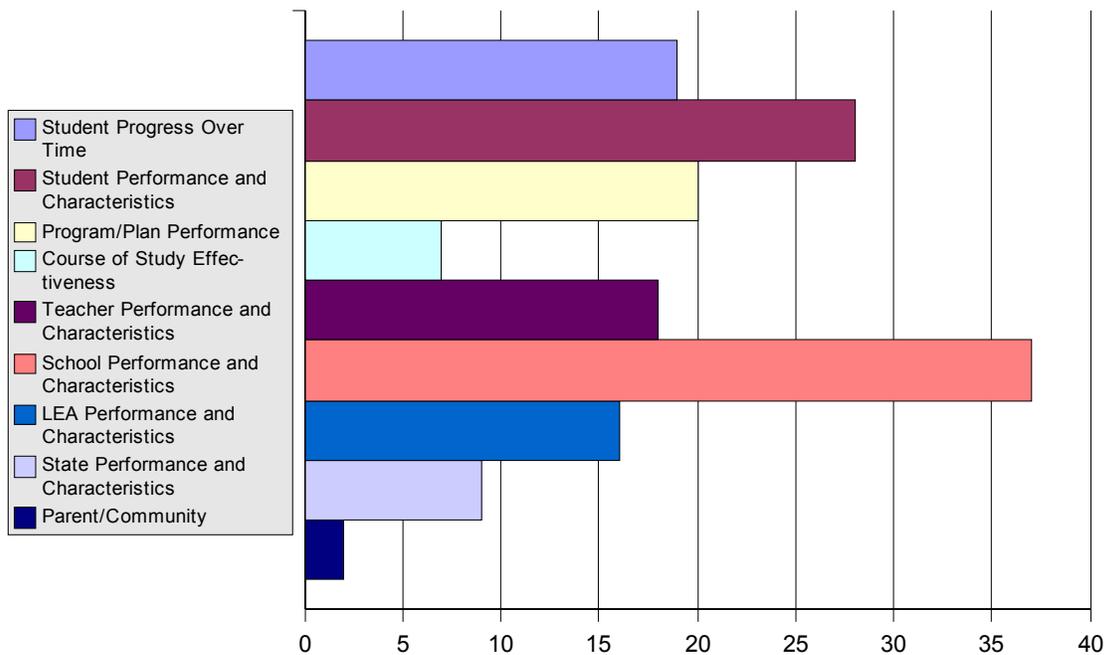
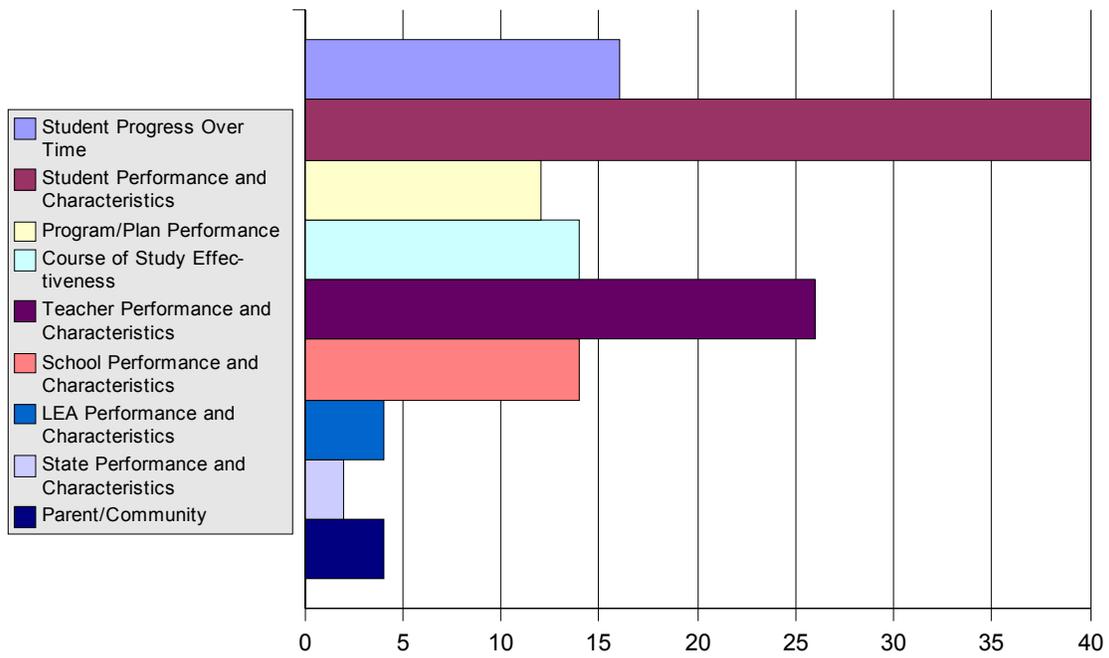


Figure 2: Question Type 2



## Data Element Descriptors

In a similar manner to above, descriptors for the data elements that respondents gave as necessary to answer each question were holistically developed.

Each question was assigned to one or more of the following Data Element Descriptors:

- Demographics
- Person Characteristics
- Assessment
- Program Participation
- Competencies
- Standards and Predicted Performance
- Outcomes
- School/District/State Characteristics

Following each descriptor below are examples of high-level data elements represented by each descriptor.

### Demographics

- AYP subgroups
- Ethnicity
- Gender

### Person Characteristics

- Teacher Content Area
- Student Mobility
- Vaccination Record
- Full Academic Year
- New Student
- Teacher Criminal Record

### Assessment

- Norm Referenced Test Results
- Criterion Referenced Test Results
- Advanced Placement Test Results
- NAEP Results
- SAT Results
- Class Grades

### Program Participation

- Special Education
- Vocational Education
- Remedial Program

Competencies

- Student ability to succeed in rigorous courses.
- Teacher Qualifications
- Financial Literacy
- Teacher Computer Literacy
- Student Computer Literacy
- Incoming students' learning needs.
- Proficient in English
- Previously Low Performing
- Past Skills and Learning
- Content Area Skills
- Teacher Level of Certification

Standards and Predicted Performance

- Predicted scores based upon previous scores.
- Grade point average compared to test scores.
- AYP Results

Outcomes

- Graduation
- Drop Out
- Success in College
- Success in Work
- Suspensions
- Teacher Tenure
- College Attendance
- Discipline
- Attendance
- Truancy
- Success Sn End-Of-Course Tests
- Teacher Success
- Professional development course taken.

School/District/State Characteristics

- School Size
- School Climate
- Mobility Rate
- Student/Computer Ratio
- Dollars Spent on Technology
- Student Funding Ratio
- Cost per Student
- School receiving Title 1 funds

## Data Element Descriptor Results

Table 2 below shows the number of times a data element descriptor was used by question type. Each question could have one or more data element descriptor attached. Figure 3 and Figure 4 depict the same information in a graphical form.

Table 2

Descriptor	Question Type 1	Question Type 2
Demographics	17	6
Person Characteristics	14	20
Assessment	44	41
Program Participation	18	8
Competencies	18	38
Standards and Predicted Performance	25	10
Outcomes	37	33
School/District/State Characteristics	31	19

Figure 3: Question Type 1

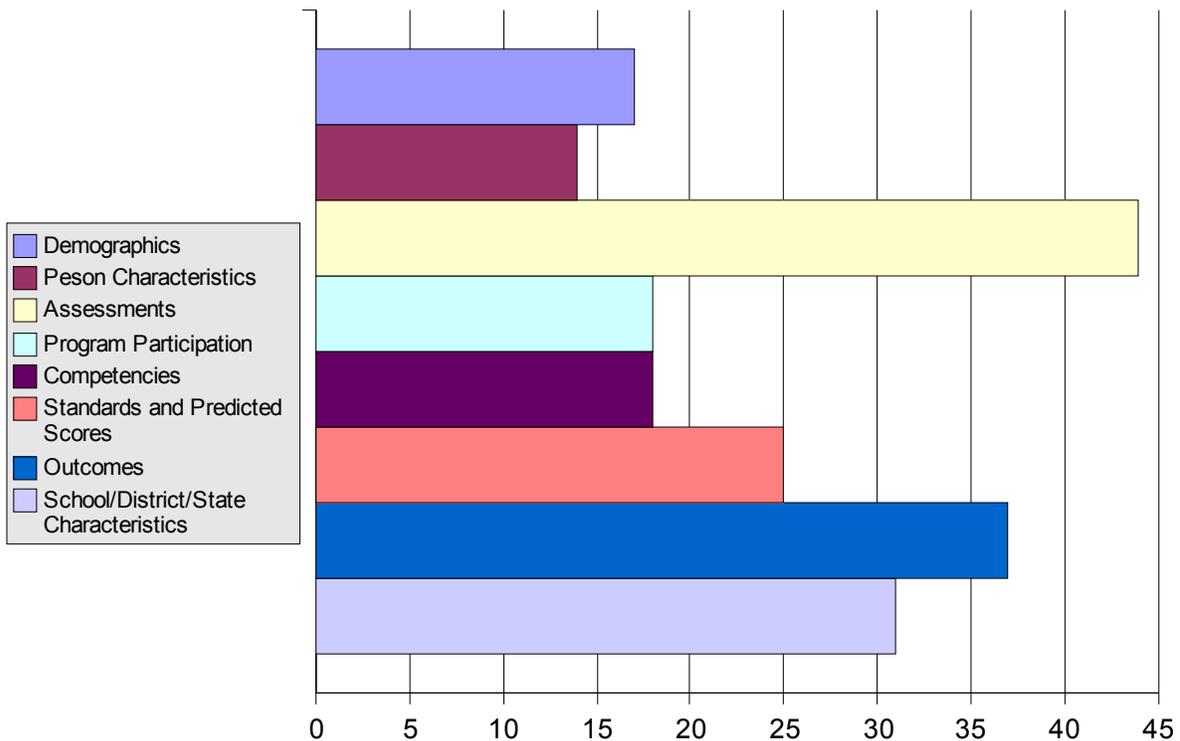


Figure 4: Question Type 2

