

CEMD Data Analyst Performance Task

Please work on this performance task independently. Please email your completed task to dahmadi@cemd.org no later than Friday 5/2. Please note, the data and performance task may not be representative of the specific work you would do with The Center for Education Market Dynamics; however, the skills used in this task of cleaning, connecting, analyzing, and reporting on data are the skills we are assessing on – not the specific content knowledge or unique insights into the specific types of data in the task.

Using the data provided from a school network data warehouse, please create a short PowerPoint presentation (no more than 10 slides) that gives basic descriptive data related to MAP results, helps identify key issues related to student performance, and suggests possible next steps for the Chief Academic Officer (CAO). Please plan to share the code where you perform your analysis in addition to your PowerPoint. While it is possible to complete this work in excel, if you are proficient in a statistical programming language such as Python, R, SQL, etc. please use this performance task to demonstrate your technical abilities.

The Chief Academic Officer is preparing to meet with the leadership teams of School A and School B to address student performance on the MAP assessment following the 2014-15 school year. They are interested in examining two key questions:

1. Is it obvious that students assigned to certain teachers were more likely meet their “Fall-to-Fall” MAP Reading or Math goals?
2. Does poor attendance or chronic tardiness impact students’ MAP performance?

If the CAO is hoping to improve performance at School A and School B, what are the key levers that they should focus on with the school leaders? What next steps would you take to help them develop a strategy for improving regional performance?

The accompanying spreadsheet contains sample data from four separate tables in the data warehouse: the MAP table, the 14-15 Enrollments table, the Students table, and the Attendance table. The Data Dictionary at the end of this document contains descriptions of each table and individual field names.

Given that you do not have much context and you do not have the ability to ask questions, you are free to make any assumptions you deem necessary. Please make clear in your final product what assumptions you have made. As with much of the data we work with, there may be elements of this data that is incomplete or inaccurate. If you see any data that seems inconsistent (or just wrong), you should note those observations in your memo/presentation and describe how you accounted for them.

Data Dictionary

MAP Table

Overall Description: The MAP test is a nationally-normed test that our students take three times a year, fall, winter, and spring. Students take a MAP Reading and a MAP Math test each time. This table contains a row for each student test event and includes test data for last school year and the current school (so far).

Map_school: Name of the School

Year: The year of the test. 2016 means the 2015-16 school year, 2015 means 2014-15 school year so a Fall test with the year “2016” is actually taken in the Fall of 2015.

Studentid: Unique Student Identifier

Grade: Student Grade when the test was taken (0 = Kindergarten)

Map_term: The part of the year when the test was taken. Students take the test three times a year – Fall, Winter, and Spring. They only receive Fall-to-Fall growth goals in the Fall.

Subject: Math or Reading

Testdurationminutes: The length of time the student spent taking the test in minutes.

Testritscore: The scaled score for the test. This score shows a child’s performance on an individual test, and is used to compare the student to other students national and assign a percentile ranking.

Breakthrough schools typically look at how student grows during the course of a year.

Testpercentile: The national percentile ranking of that student’s scale score. We often divide students in to quartiles to describe student performance; this may be useful to your analysis.

Typicalfalltofallgrowth: The amount of growth in RIT score a student would need to make between the fall of one year to the following fall test in order to remain at the same percentile. The relevant goal is for the Fall 2015 Test, since it sets a goal for the 2014-15 school year and can be compared with actual performance in fall of the 2015-16 school year.

14-15 Enrollments Table

Overall Description: The 14-15 enrollments table contains a list of all course enrollments for students from a point in time near the end of the 2014-15 school year. Each course record ties a student to a specific teacher in a given subject.

Studentid: Unique student identifier

SchoolID: Name of the School

Course_Name: The name of the English-Language Arts (ELA) or Math course in which the student was enrolled in the 2014-15 school year. (Course_Number is essentially an identical field)

Section_Number: A number assigned to each unique meeting of a certain course (e.g., one group of 30 students may be enrolled in the 1st section of 4th grade ELA taught by one teacher, and another 30 students may be assigned the 2nd section of 4th grade ELA taught by a different teacher).

Teacher_ID: A unique teacher identifier.

Students Table

Overall Description: The students table provided contains information on enrolled students as of January 2016.

Studentid: Unique Student Identifier

SchoolID: Name of the School

Grade_level: Student’s 2015-16 grade level. (0 = Kindergarten)

Attendance Table

Overall Description: The attendance table tracks daily attendance for every student. This table includes attendance for last school year (2014-15) only.

Studentid: Unique Student Identifier

SchoolId: Name of the School

Eventdate: Day attendance was taken

AttendanceCode: Student's attendance status that day (P = Present, EA = Excused Absence, ET = Excused Tardy, UA = Unexcused Absence, UT = Unexcused Tardy, S = Suspended, N/A = No attendance entered).

A note on attendance data: A student with any of the codes UA, EA, N/A, or S shall be considered *absent*. All other codes should be counted as being *present*.