# NYC Teacher Effectiveness Analyst

# Hiring Exercise

Thank you for your interest in Office of Teacher Effectiveness. Our office’s hiring process includes a focus on exercises that are similar to the day-to-day work for the open position. This gives you an opportunity to make a meaningful assessment of how a role will fit you, and allows us to observe your skills first-hand.

The most important responsibilities include drawing lessons from the best available data, research, and practical experiences to inform and advance our work. The exercise below is designed to simulate these responsibilities on a small scale.

There is no one right answer. We are looking for responses that demonstrate excellent analytical skills, attention to detail, and the ability to communicate data clearly and effectively to a lay audience.

Please complete the exercise below and submit your work to the Staffing Manager by the given deadline.

## **Background**

In 2010, the NYC Department of Education (NYCDOE) embarked on the implementation of a low-stakes, research pilot evaluation and development system (TMP) designed to provide teachers with targeted professional development and accurate, increased levels of feedback on their instructional practice. The model included increased classroom observations by school leaders using a rubric to rate teacher practice and an effort to measure teacher impact on student outcomes through teacher-created assessments. As a way to support school leaders with the implementation of this new model and the new practices associated with it, Talent Coaches were hired by the NYCDOE and were charged with visiting school leaders in the research pilot on a weekly basis to provide support and training.

As the system was new to teachers and leaders and in its first year of implementation, stakeholder feedback on the progression of the work and components of the model was critical. The DOE surveyed school leaders at the end of the year to obtain their input on the process.

### Definitions

* **Observation** – The activity of going into a teacher’s classroom to observe their practice and rate the instruction using a rubric.
* **Feedback** – The process of providing a teacher with information on strengths and areas for development based on classroom observations.
* **Coach/Talent Coach** – The staff hired to provide direct support to school leaders as they implement the components of the research pilot evaluation and development system.
* **ARIS Learn** – The online data management tool where school leaders were able to capture observation rating data and feedback for teachers.
* **Measures of Student Learning** – The component of the research pilot system designed to assess teacher impact on student learning growth and outcomes through teacher-created assessments and learning goals.
* **End of Year Conversation** – An in-person conversation between an individual teacher and their school leader to review the final teacher practice and measures of student learning ratings and feedback for the year.
* **Danielson Framework for Teaching** – The name of the rubric used to rate components of teacher instructional practice.

## **Exercise**

### PART 1 Survey Analysis

The goal of the school leader survey is to gather data about implementation successes, school leader perception of the research pilot system, perceptions of their skill levels to implement its components, and to gather information on potential design enhancements based on their responses.

Below are two documents that contain the survey questions and results from the survey gathered in June 2010. The first Excel file on the left contains the frequency findings, and the second Excel file on right contains the raw data from the survey for further analysis.



Please review the survey frequencies and raw data and analyze the responses. In a one-page memo to the Senior Leadership of the Office of Teacher Effectiveness at the NYCDOE, please outline the main findings and headlines of the survey, and offer recommendations based on the findings. Please note:

* It is important the data are accurate and the findings are clear, articulate and actionable, as this memo will be used to consider changes to the research pilot system and its implementation.
* **Optional**: If you have experience conducting statistical analyses, such as regression, t-tests, etc., feel free to utilize such techniques here to support findings, if applicable.

### PART 2 Data Analysis

At the end of the year, research pilot data is collected on teachers participating in TMP. Information on the number of observations they received and their overall rating for the measures of teacher practice (final rating based on all classroom observations) are critical components of this data collection process. The ratings teachers can receive are Highly Effective, Effective, Developing, or Ineffective. Two Excel files are below:

* A spreadsheet of all teachers participating in the research pilot in 2010-11, along with demographic information, and observation completion information. All data has been anonymized and changed as necessary to protect confidentiality.
* A spreadsheet of all teacher end of year ratings for measures of teacher practice (classroom observation final rating). This rating was provided by school leaders and reflects a holistic judgment based on all observation information and evidence they have collected throughout the year. All data has been anonymized and changed as necessary to protect confidentiality.

*\*\*Please note that all data and scenarios presented in this project have been altered from original program data solely for the purpose of this hiring process.*



***\*\*You can use the Employee ID as the unique identifier for each teacher.***

### Instructions to begin:

1. Please upload the Excel files into Access, SPSS, or similar software if it is available.

* **Note:** If you do not have Access on your PC computer, we encourage you to download a free trial version: <http://office.microsoft.com/en-us/access/>. If this is a hardship, or if you are using a Mac that does not have Access installed, you may use SPSS, Excel or a similar program.

1. Add a field to the Teachers Demographics and Obs table and name it “Rating.”

* If a teacher is on the list of those rated Ineffective, then enter “Ineffective” for the Rating field; all other ratings should be labeled “Other.”

1. Briefly explain how you accomplished this.

### Data Analysis

We want to conduct several analyses. Please perform the calculations necessary to complete each of the following tables.

1. Find the share of teachers within each borough who received Ineffective ratings.

* To find borough information for each teacher, you will have to refer to his/her “School.” The first letter of the number refers to the borough, as follows: K: Brooklyn; M: Manhattan; Q: Queens; R: Staten Island; X: Bronx.

|  |  |
| --- | --- |
| **Borough** | **% Ineffective** |
| Bronx |  |
| Brooklyn |  |
| Manhattan |  |
| Queens |  |
| Staten Island |  |

1. We are looking for trends in the rating distributions of teachers with different levels of experience. Complete the table below using the designated seniority groupings to show what share of teachers in each seniority group received the various end of year ratings.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Seniority Group** | **% Ineffective** | **% Developing** | **% Effective** | **% Highly Effective** | **Total** |
| 0 to 3 |  |  |  |  | 100% |
| 4 to 6 |  |  |  |  | 100% |
| 7 to 12 |  |  |  |  | 100% |
| 13 to 19 |  |  |  |  | 100% |
| 20 or more |  |  |  |  | 100% |

1. We want to compare the observation completion of the teachers with different end of year ratings to determine whether teachers receiving lower or higher ratings had more or less observations than other groups. Complete the table below by calculating the percent of teachers in each rating category who have each level of observation completion. For example, if there are 100 Ineffective teachers and 40 of them have 1-3 observations, type 40% into the first cell.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **End of Year Rating** | **% Zero Observations** | **% 1-3 Observations** | **% 4 or More Observations** | **Total** |
| Ineffective |  |  |  | 100% |
| Developing |  |  |  | 100% |
| Effective |  |  |  | 100% |
| Highly Effective |  |  |  | 100% |
| **All Groups** |  |  |  | 100% |

1. We want to identify the research pilot schools that had the most teachers whose practice was rated Ineffective in 2010. Complete the table below, providing the School code of each of the 10 schools that rated the greatest number of teachers Ineffective (please rank them in descending order).

|  |  |
| --- | --- |
| **School Code** | **# Ineffective Rated Teachers** |
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1. Briefly explain how you obtained each set of numbers for questions #1-4 above.

* Borough:
* Seniority:
* End of Year Rating:
* Top 10 sending schools:

1. Think about some additional research questions you would ask of the same data and what additional data you would request to further explore this data set. Briefly describe 2-3 ideas for additional research or further exploration.