



Data Warehouse 101 Handbook

Introduction to the BPS Data Warehouse

User Guide for the BPS Data Warehouse

Version 1.0

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Introduction

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Introduction

This Guide

The material in this user guide will provide you with the concepts and skills necessary to access and use the reports provided through the BPS Data Warehouse.

What is a Data Warehouse?

When you consider the need to address relationships among multiple student characteristics and multiple performance measures you can imagine how difficult it is to compile and display the data necessary to answer your questions about student performance. When different types of data are located in several different places, it can be impossible to accurately determine how they relate. In general, after you compile the data from the separate reports, it will still need to be processed through another tool in order to display results meaningfully. This grueling process demonstrates the need for a **repository** where all data are stored and can be linked and displayed through one tool. This is the purpose of a data warehouse. It contains the data from multiple sources, allowing users to populate the data into reports that answer their specific questions.

Unlike a typical "transactional" system used for day-to-day operations, a data warehouse is structured to maintain large amounts of related, historical data for analysis and reporting. A data warehouse provides for easy reconstruction of "snapshots" of historical data, as well as the ability to link such snapshots over time using certain criteria.

The BPS Data Warehouse

BPS has loaded BPS student attendance data from 2005 to the present into the BPS Data Warehouse. The warehouse may also be expanded to include discipline and attendance detail, financial, enrollment, and/or program data.

The ESE Data Warehouse

The Department of Elementary and Secondary Education (ESE) has created its own data warehouse. The ESE has loaded MCAS/MEPA and SIMS data from 2002 to the present into the Education Data Warehouse. Grant districts, such as the BPS, have the capacity to load local data, such as student and staff schedules, grades, and local assessments. As the ESE's warehouse is rolled out, more districts will be able to load additional student and staff data. The warehouse may also be expanded to include discipline and attendance detail, financial, and program data.

Contact Garth Gregoire, BPS Data Warehouse Director, with any questions about the BPS or ESE Data Warehouses at ggregoire@boston.k12.ma.us or 617-635-9429.

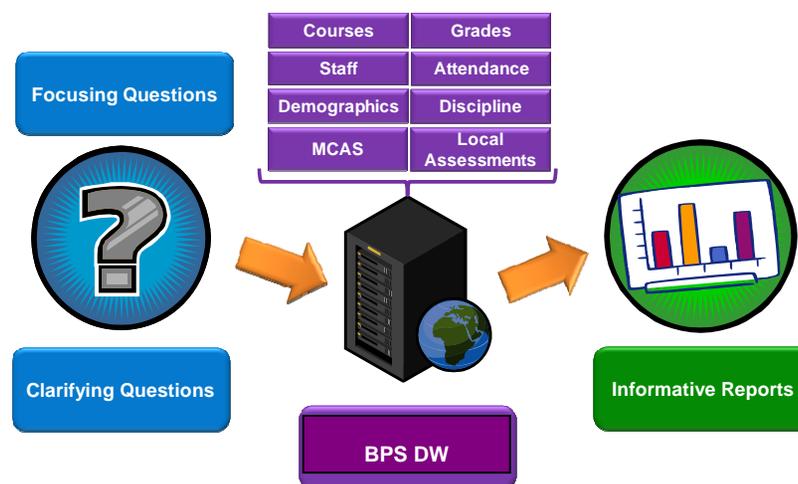
Introduction

Benefits of a Data Warehouse

A data warehouse brings the power and sophistication of technology to schools in a way that allows educators to manage and use data from a variety of sources. Warehousing data from student attendance, grades, student subgroup classifications, test scores, observations, disciplinary actions, and more, provides decision-makers with capacity to examine and reflect more meaningfully on what is working and what is not. A data warehouse is a tool for data storage and retrieval that allows leaders to more efficiently examine performance over time and at multiple levels: student, class, grade level, school, and district. Improving educational performance and accountability depends on understanding the relationships among areas such as student characteristics, curricula, standards, assessments, grades, special programs, teacher qualifications, program spending, discipline incidents and attendance. Without a data warehouse, it is difficult to cross-reference information. Without the ability to link data, decision-makers cannot leverage the full potential of the information we collect and process. A data warehouse solves this problem.

A data warehouse is a "longitudinal data system" capable of linking student, teacher and financial information over multiple years and across multiple schools and districts. Using a warehouse, school and district decision-makers can take key metrics from multiple areas and analyze them in a single view.

In the past, many educational questions were difficult to answer. But with the ability provided by a data warehouse to easily aggregate and disaggregate data, compare disparate data, and produce customized reports, you are able to answer more detailed and meaningful focusing and clarifying questions through the data analysis process.



Introduction

Focusing Your Data Analysis

Educational leaders are now collecting more data than ever before. Instead of pouring through substantial amounts of data looking for answers to undefined questions, use *focusing questions* to help set the stage by guiding your analysis: “*What is it that I want to know?*” This allows you to search for specific answers without being distracted by other data. The answers to these questions will be more meaningful because you have targeted your search.

Once you have established a focusing question, the data needed to answer that question become apparent. Your data analysis will be more productive because you have first defined your question.

You will find that once your focusing question is answered, it may lead to other questions. Formulating these *clarifying questions* will yield richer information pertaining to your search.

The Cycle of Inquiry

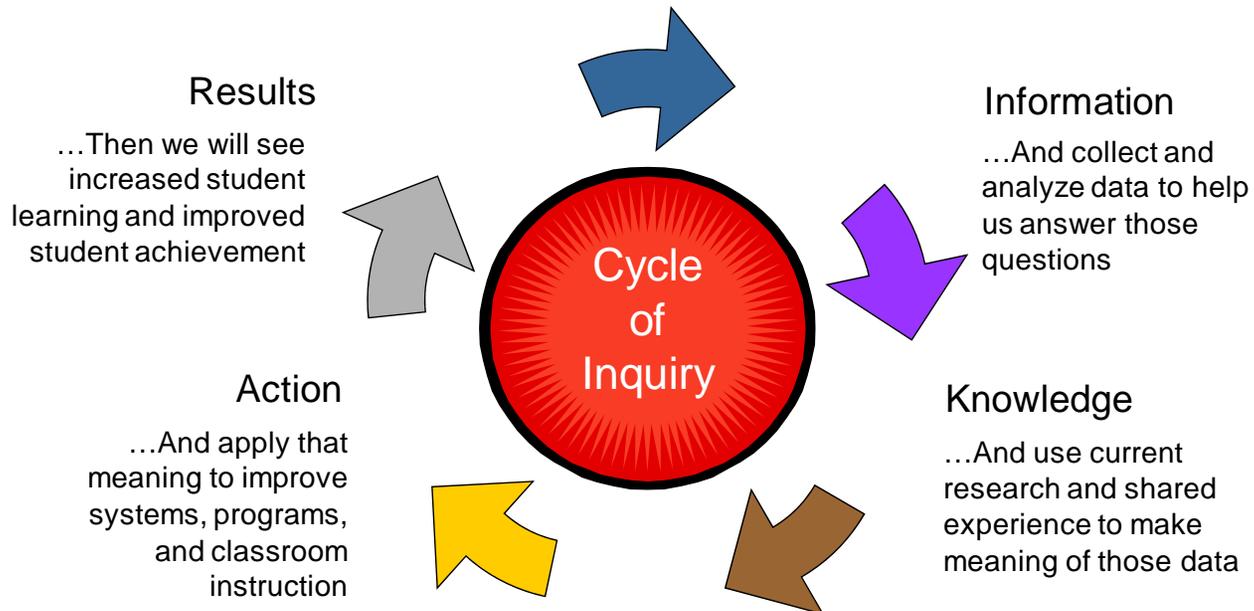
The *Cycle of Inquiry* graphically describes a theory of action, or logic model, which is the foundation for effective data use. A disciplined application of this kind of data-driven approach builds a district and school environment that is focused on continuous improvement grounded in evidence. A data warehouse is an excellent tool that facilitates data analysis, but it alone will not achieve continuous improvement. Concrete actions that are grounded on evidence and continually monitored through the collection and analysis of formative and summative data are critical to achieve improved results.

Cycle of Inquiry

Focusing Questions

If we ask the right questions

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Introduction

Effective Data Use

Most educators today realize that school improvement is a complex process requiring data-driven inquiry to inform actions taken by school leaders. When the dialog about school effectiveness is driven by focused questions about student performance, school staff will ask for more extensive data on factors that affect student success. Clearly focused questions become a stimulus for clarifying questions, and the need for deeper data access and analysis. An inquiry-driven approach requires leaders to: ask the right focusing questions, collect information to help answer those questions, apply up-to-date knowledge to reflect on the meaning of the data, and then apply that meaning as they take action in changing instruction, curriculum or other school factors. Framing the use of data in terms of focusing questions and reflective use of data are key elements contributing to successful school improvement.

The research and practice literature is clear that a culture of data use is only developed, sustained and maintained when there is distributed know-how and school or system-wide commitment to the importance of data-driven decision making. Think about how you will bring back this set of knowledge and skills to others, thereby enhancing the potential that data will be used systemically and productively to improve student learning and achievement.

Orientation to the Data Warehouse

In the following pages, you will be introduced to the BPS Data Warehouse interface. The goal of this section is to familiarize you with the website.

Open your Web browser and go to the BPS Data Warehouse homepage: <http://bpsdepot/dw>

- 1 Enter your user ID and password. (This should be the same as your MyBPS credentials.)
- 2 Click the OK button. The Welcome page displays.

TIP



You can create a shortcut to this site on your browser.

WARNING



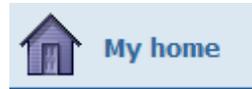
Do not share your password or write it down in a place easily accessible to others.

The screenshot shows a 'Log on' dialog box with a blue header. Below the header, it says 'Please type your credentials for authentication.' There are three labels: 'Namespace:' with the value 'T-MyBps', 'User ID:' with an empty text box, and 'Password:' with an empty text box. At the bottom, there are 'OK' and 'Cancel' buttons.

Orientation to the Data Warehouse

3

Click the **My home** button.
The **Public Folders** tab will display.



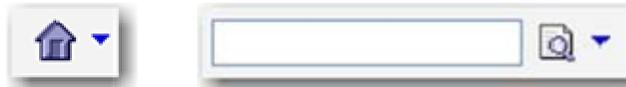
The **Public**



Navigating Using the Header Menu



- The **Public Folders** tab will navigate you to a menu of folders that contain various reports and data manipulation tools housed in the data warehouse. This is where you will go to view predefined reports for the first time.
- **My Folders** is a place where you can store reports that you frequently use in order to find them quickly and easily. Think of it as a place to bookmark reports in the same way that you might add a particular webpage to a list of favorites.



title or description.

The **Home** button takes you to your **Home**, which defaults to the **Public Folders** tab. The **Search bar** allows you to search for reports containing the search criteria you provide. It searches by the contents of the report



The **Help** button gives you access to other help options, including COGNOS general training.

Orientation to the Data Warehouse

Running Predefined Reports: Introduction

Now that you know how to navigate the warehouse site, you will learn how to run basic predefined reports. You will be taken through a simple scenario to add context to the process of accessing reports.



SCENARIO

A principal would like to know about attendance rates for her school for the previous three (3) years. She posed the Focusing Question: on average, are boys more frequently absent than girls?

Locating the Reports

- 1 Click on the **Public Folders Tab**.
- 2 Choose the report that holds the data that will answer your *focusing question*. For example, click on the **Att-2012 - ADA/ADM School Level Breakdown by Gender and Race** link.

Orientation to the Data Warehouse

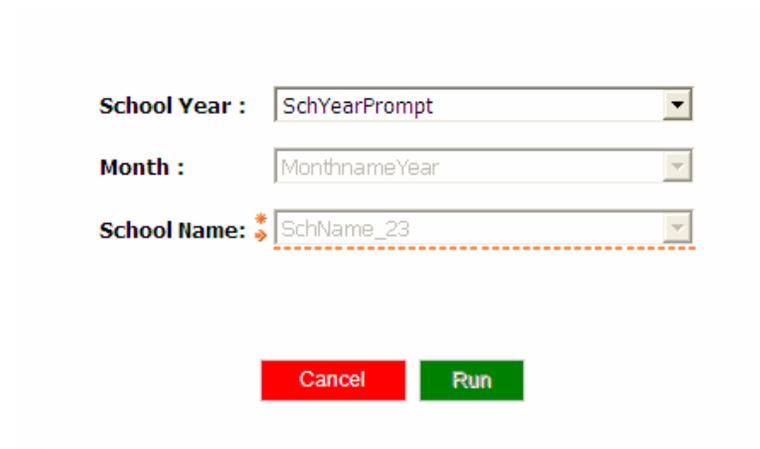
The Prompt Page: Filtering a Report

After selecting the report, the Prompt page appears. The **Prompt** page presents you with a number of prompt values by which to filter data.

- Filters include **School Year, Month and School Name**.

Note: Items that are required will be highlighted with an (*) asterisk.

- Each dropdown menu displays the available options the data can be filtered by.
- Once you are finished selecting the correct filters click **Run** to run the report. If you need to start over, click **Cancel**.

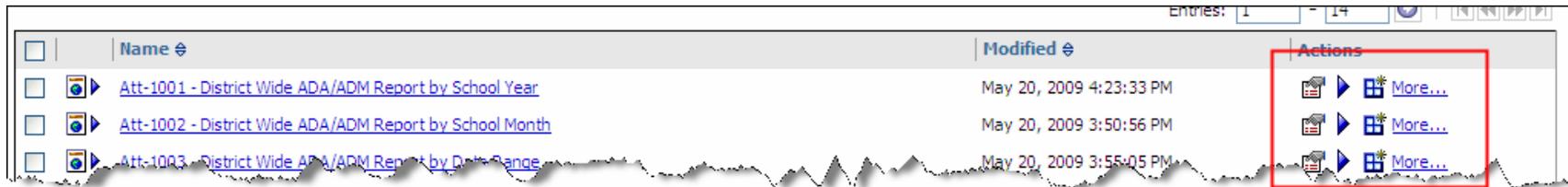


The screenshot shows a web form with three dropdown menus and two buttons. The first dropdown is labeled 'School Year' and contains the text 'SchYearPrompt'. The second dropdown is labeled 'Month' and contains the text 'MonthnameYear'. The third dropdown is labeled 'School Name' and contains the text 'SchName_23'. The 'School Name' label and dropdown are highlighted with a red dashed border. Below the dropdowns are two buttons: a red 'Cancel' button and a green 'Run' button.

Orientation to the Data Warehouse

Report Actions

There are also report option buttons available on the **Public Folders** and **My Folders** where lists of reports are displayed. There is a row of buttons next to each report that are referred to as **Action** buttons. Below is a summary of the actions associated with each of the buttons:



The screenshot shows a table with three columns: Name, Modified, and Actions. The 'Actions' column for each row contains three icons: a document with a play button, a document with a gear, and a document with a plus sign. A red box highlights these three icons for each row.

	Name	Modified	Actions
<input type="checkbox"/>	Att-1001 - District Wide ADA/ADM Report by School Year	May 20, 2009 4:23:33 PM	   More...
<input type="checkbox"/>	Att-1002 - District Wide ADA/ADM Report by School Month	May 20, 2009 3:50:56 PM	   More...
<input type="checkbox"/>	Att-1003 - District Wide ADA/ADM Report by Date Range	May 20, 2009 3:55:05 PM	   More...



The **Run** button allows you to run the report and change how you want to run and receive your report.



Use the **Set Properties** button to view properties of the report.



Use the **Report View** button to create a report view, which uses the same report specification as the original report, but has different properties. More on report views in the following pages!

[More...](#)

More actions including move, copy, delete, and create shortcuts.

Orientation to the Data Warehouse

Copying a Report into My Folders

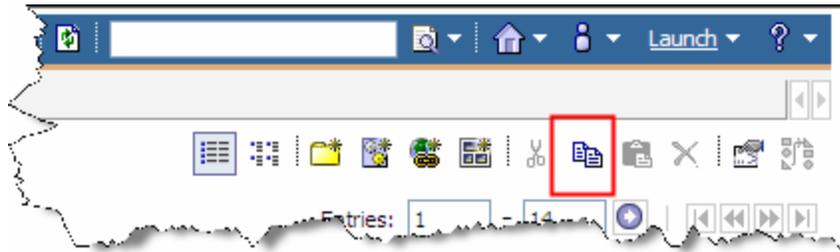
You can save a frequently run report in your **My Folders** section. The **My Folders** tab is a good place to store reports to which you need regular access.

- 1 Go to the **Public Folders** tab and put a check mark in the box next to the report of your choice. (Use the **Home** button to navigate back to the Welcome page if the **Public Folders** tab is not visible).

- 2 Click on the **Copy** button  from the toolbar above the report entries.

- 3 Click on the **My Folders** tab.

- 4 Click the **Paste**  button. The report will paste into the **My Folders** section and be ready to run.



Orientation to the Data Warehouse

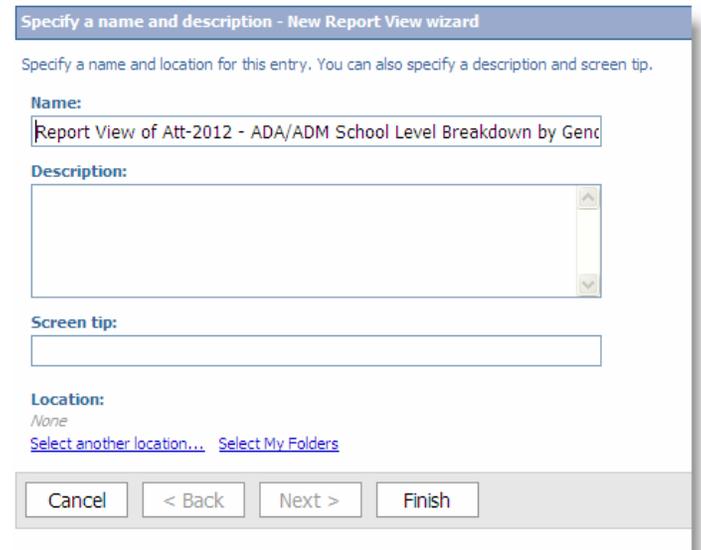
Saving a Report View in My Folders

Saving a **Report View** allows you to access a predefined report that you have saved in My Folders. This will bypass the prompt page, allowing you to view the data in the same way it was displayed when you saved it.

To save a report as a Report View in a My Folders:

- 1 From the **Public Folders**, tab, click the **Report View** button.
- 2 When the **New Report View Wizard** window displays, enter a name, description and/or screen tip for the report view.
- 3 Choose the location where the report view will be saved. In this case, select **My Folders**.
- 4 Click **Finish**. Your report is saved as a report view in your **My Folders**.

When you open the report from your **My Folders**, you will notice that the same report is displayed from the last time you saved.



The screenshot shows a dialog box titled "Specify a name and description - New Report View wizard". The dialog contains the following fields and options:

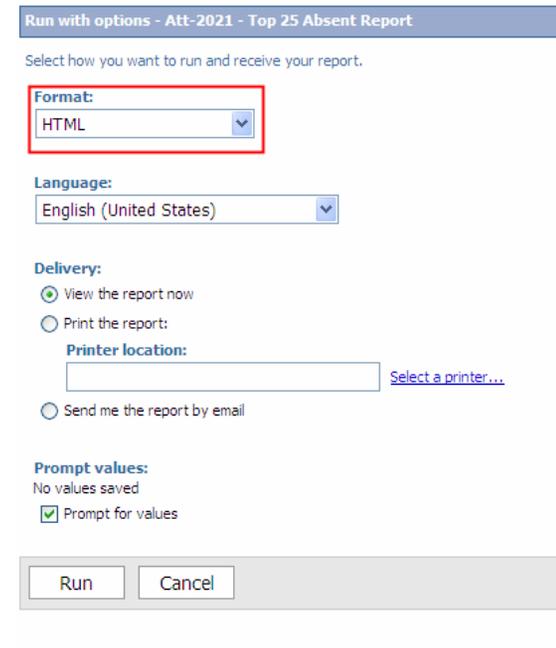
- Name:** A text input field containing "Report View of Att-2012 - ADA/ADM School Level Breakdown by Gen".
- Description:** A text area with a vertical scrollbar, currently empty.
- Screen tip:** A text input field, currently empty.
- Location:** A dropdown menu showing "None". Below it are two links: "Select another location..." and "Select My Folders".

At the bottom of the dialog, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

Report Formats

You can export the data into a variety of formatting options.

- 1 From the **Public Folders** tab, click the **Run with options** button. 
- 2 Select how you want to run the report by choosing from the list of Format options. Format options include:
 - PDF: This is the best format in which to print a report.
 - Excel
 - CSV
 - XML
- 3 Click the **Run** button.



The screenshot shows a dialog box titled "Run with options - Att-2021 - Top 25 Absent Report". The dialog prompts the user to "Select how you want to run and receive your report." It contains the following fields and options:

- Format:** A dropdown menu with "HTML" selected.
- Language:** A dropdown menu with "English (United States)" selected.
- Delivery:** Radio buttons for "View the report now" (selected), "Print the report:", and "Send me the report by email".
- Printer location:** A text input field with a "Select a printer..." link to its right.
- Prompt values:** A checkbox labeled "Prompt for values" which is checked.

At the bottom of the dialog are "Run" and "Cancel" buttons.

Wrapping Up

Congratulations! You've learned:

- About the inquiry-driven process used to analyze data.
- About the functions and benefits of a data warehouse.
- How to log on to and navigate the BPS Data Warehouse.
- How to locate and run predefined reports.
- How to use My Folders.

Now it's important for you to take action using your new capabilities and understanding. Take a few minutes to answer the questions to the right. Your responses will help guide your next steps toward building a culture of data use in your school and/or district.

Now What?

- Who else in your school or district needs to know this material?
- What are the key concepts that you will want to share with others?
- What technical information would be helpful for others in your school or district to know?
- What will be your plan to make sure this occurs?