

**Slide 1 of 20**

Title Slide: DataLab Features and Tools for Research

**Slide 2 of 20**

This module introduces the useful research and data analysis tools available through the National Center for Education Statistics's DataLab website, which currently include the Tables Library and PowerStats. This module will:

- describe the features of the DataLab website,
- provide an overview of the Tables Library and PowerStats, and
- identify the studies that are available for research using the DataLab data tools.

Throughout this module, underlined blue screen text indicates a link to additional resources.

**Slide 3 of 20**

DataLab's research and data tools enable users to easily access statistics from NCES studies to find estimates that have already been published or generate estimates.

At present, DataLab has two tools for finding estimates from NCES data: the Tables Library, which can be used to find estimates within a large library of pre-generated tables that have already been published in NCES reports, and PowerStats, which can be used to generate estimates from micro-level datasets without accessing data at the individual case, or unit record, level.

With PowerStats, analysts can conduct analyses without accessing commercially available statistical software packages, conduct analyses on some restricted-use data without obtaining a restricted-use license, and generate national-level estimates and run hypotheses tests that properly account for NCES studies' complex sample designs, including the correct calculation of standard errors.

The DataLab tools facilitate exploration of NCES datasets, helping answer the fundamental question: "Are these NCES data for me?"

**Slide 4 of 20**

Via DataLab, estimates and analyses can be produced for many studies that fall under three groups: P-12 Students and Schools, Postsecondary Students and Faculty, and Adult Education.

The P-12 group includes studies such as the Pre-Elementary Education Longitudinal Study, or PEELS, a longitudinal study of children with disabilities who were 3 to 5 years old at the start of the study in 2003 and were followed through 2008. The Early Childhood Longitudinal Study, Birth Cohort, or ECLS-B, is a cohort study of children born in 2001 who were followed from about 9 months of age through kindergarten entry.

## **DataLab Features and Tools for Research**

This group of studies also includes studies such as the Education Longitudinal Study of 2002 (ELS:2002), a study that focuses on the transition of American youth from secondary schooling to subsequent education and work roles; the High School Longitudinal Study of 2009, a nationally representative, longitudinal study of 9th-graders who were followed through their secondary and postsecondary years, with an emphasis on understanding students' trajectories from the beginning of high school into postsecondary education, the workforce, and beyond;

the Schools and Staffing Survey (SASS), which collects information on public and private schools, public and private school teachers, public and private school principals, districts, and library media centers; the School Survey on Crime and Safety (SSOCS), which collects school-level data on crime and safety; and the Private School Universe Survey (PSS), which collects information on the total number of private schools, teachers, and students in the United States.

### **Slide 5 of 20**

The Postsecondary Students and Faculty group of studies contains the National Postsecondary Student Aid Study, or NPSAS, which collects valuable information on how students and their families pay for postsecondary education. The Beginning Postsecondary Students Longitudinal Study (BPS) is a study of students who are just beginning their postsecondary education, while the Baccalaureate and Beyond Longitudinal Study (B&B) looks at students who are graduating from college and focuses on employment outcomes, enrollment and persistence in graduate education.

The National Study of Postsecondary Faculty, or NSOPF, addresses issues related to workload, salary, and tenure among America's Faculty at Postsecondary Institutions.

The Adult Education group contains the Adult Training and Education Survey (ATES), which focused on adults enrolled in training programs.

Over time additional datasets may be added to DataLab depending on the needs of each NCES program.

### **Slide 6 of 20**

The DataLab homepage serves as an entryway for the DataLab tools and as a central location for DataLab-related announcements, resources, and training materials.

The home page provides users with a roadmap to many different resources: from here they can learn about new tables published in the Tables Library and new data available in PowerStats; explore datasets available in PowerStats; and access resources in the Learning Center.

The Learning Center offers users many helpful hints for using DataLab. It demonstrates what researchers should do as they are getting started with the tools, including how to choose a dataset. It also explains how users can view and edit tables they create as well as the various types of tables that can be created, edited, and saved.

## DataLab Features and Tools for Research

It is important to note that the Learning Center documentation features postsecondary education datasets, however the concepts and analysis steps presented are the same for all datasets included within DataLab.

Now, let's turn our attention to the Tables Library.

### Slide 7 of 20

The Tables Library contains tables from NCES publications that cover a range of topics, though the majority of tables included in the Library are related to postsecondary education. Statistics of interest may have already been published by NCES, so DataLab users are encouraged to look for published data within the Tables Library before embarking on their own statistical analyses.

The Tables Library can be searched by keyword using the Search Tables Function. Search results can be narrowed by data source and publication year.

To access the Tables Library from the DataLab homepage, click on the green table icon near the top left corner of the page.

### Slide 8 of 20

The Tables Library homepage includes two main components: the search menu, where you can enter search terms or filter results; and the latest releases section, where the most recently released publication tables are featured.

There are two ways of searching for estimates within tables: by keyword or using a filter option.

### Slide 9 of 20

To search for tables by keyword, enter a keyword (for example, "graduate," "cost," or "major") into the search term box with a magnifying glass icon. In this example, the user searched on the keyword "debt." All search results will be shown in the search results area below the menu.

The number of matching results will be listed at the top of the search results. Here are all of the tables found in the Tables Library with estimates related to the keyword "debt." Users can advance through the pages of results by clicking the page number or arrows at the top right of the search results.

To optimize the search results, related search terms are automatically added to your search query. If a search term entered has a corresponding like term, then any related search term will appear above the results as grey buttons. In this example, related search terms include "aid," "financial aid," and "loans," among others. Related terms can be removed by clicking the X buttons beside them.

### Slide 10 of 20

A user can further limit their search results by topic, source, and year.

## DataLab Features and Tools for Research

Clicking on the menu labeled “Filter results by topic” expands the topics menu. Users can then select any of the options listed below each topic heading.

If a subject has a subtopic, then an additional dropdown menu labeled “Filter results by subtopic” will display where users can further narrow their topic selections. Any tables that correspond to selected topics will display in the search results view.

### Slide 11 of 20

The “Filter results by topic” menu can also be used with the keyword search function by entering a keyword in the search menu and then expanding the “Filter results by topic” menu. Doing so will show the number of tables with applicable data for each topic. Clicking on the orange button labeled “Reset Search” will clear the search results.

Instead of entering a keyword, a user can also use the dropdown menu labeled “All sources” to change the selected data source. After changing the data source, table counts in the “Filter results by topic” dropdown menu will be updated to show only the number of tables with applicable data for the specified data source.

The dropdown menu labeled “All release years” can be used to select a release year to filter your search results by release year instead of data source.

### Slide 12 of 20

The next few slides look more closely at the search results view, along with the viewing and sorting options that are available.

As discussed above, a user can navigate through search results by entering any keyword (for example, “loan,” “income,” “federal,” or “race”), or by selecting any option from the topic, sources, or release year dropdown menus to advance to the search results view. From the search results, the page numbers or arrows can be used to advance back and forth between search result pages. The orange “View” button or table title can be selected to advance to a specific table in the search results.

The table number or table title column headings can also be used to sort by one of these two fields; clicking on the data source column heading brings up information on the data source filter dropdown menu. The checkboxes can be used to limit the data sources in the search results.

### Slide 13 of 20

Once a user has selected a table of estimates, they can expand the menu labeled “Estimates” and select the option labeled “Standard Errors” to view the corresponding standard error table. Clicking on the eye icon will expand the view options, where the various view options (“View related tables,” “View related report,” and “View study website”) can be selected.

Finally, options for downloading a table of interest can be viewed by clicking on the download icon.

**Slide 14 of 20**

In addition to searching for tables by keyword, a user can also search for entire publications by keyword. Doing so shows all corresponding publication tables in a single search results page.

To search for publications by keyword, a user should select the radio button beside the “Publications” option next to the text “Search for:” and then enter a keyword (for example, “first look,” “debt burden,” “teaching,” “trends,” etc.) in the search menu.

In this example, the search was on the keywords “debt burden.” The number of matching publications will be displayed at the top, and results will be listed by publication ID, release date, and publication title.

A user can sort results by publication number, release date, or publication title by clicking the search results table headers, or can see the corresponding publication tables by clicking the link labeled “See tables” beside a publication title.

**Slide 15 of 20**

Alternatively, if the NCES publication number is known, it can be entered as the search term to go directly to a publication tables view. Enter a publication number (in this example, “2020460” was entered) or click the “See tables” link after searching for a publication by keyword to enter the publications table view. In this view, publication tables are listed by table or figure number first, and then by table title and data source; you can re-sort the results by table number or by table title, and you can filter by data source by clicking any of the corresponding column headings.

Now, let’s turn our attention to PowerStats.

**Slide 16 of 20**

PowerStats can be used to: Quickly and easily generate simple statistics, run more complex analyses, and produce tables, charts, and graphs. Specifically, PowerStats allows users to generate percentages, averages, medians, and centiles; run linear and logistic regressions, and produce visual representations of data, including pie charts and bar graphs.

For studies for which the same data have been collected at multiple points in time, users can run trend analyses to look at changes in averages, medians, and percentages over time.

**Slide 17 of 20**

As noted above, PowerStats is a statistics generator that uses micro-level data to produce desired output without utilizing a statistical analysis program or accessing data at the case level. In addition, because users only see estimates and standard errors in the results, PowerStats allows researchers to conduct analyses based on restricted-use data without having to obtain a restricted-use license. Currently, PowerStats users can generate percentage distributions, averages, medians, and centiles, as well as run

## **DataLab Features and Tools for Research**

linear and logistic regressions and produce correlation matrixes. In addition, for those studies for which the same data have been collected at multiple points in time, trend analyses can be conducted.

It is important to note that to comply with confidentiality laws, some datasets in PowerStats are public-use data instead of restricted-use data.

To access PowerStats, users must create a DataLab account by entering their email address, creating a password, and agreeing to the terms of the NCES Data Usage Agreement. By creating an account, users will be able to save, retrieve, and store their work within the DataLab.

Launching PowerStats is simple; a user just clicks on the PowerStats icon and selects the dataset they want to analyze.

### **Slide 18 of 20**

From this launch page a user can start to create new table with desired estimates or conduct a regression or correlation analysis. A user must first click on the green dropdown menu labeled “Select an Analysis Type to Begin” and then choose an analysis type from one of the six options. After making a selection, the user will see the PowerStats workspace where they can customize their analyses.

More detailed information about how to use PowerStats, including analysis examples, can be found on the DataLab website, particularly within the Learning Center.

### **Slide 19 of 20**

In addition to the resources described within this module, and within DataLab, NCES offers a help desk to assist analysts using DataLab. Users can email [NCES.Info@rti.org](mailto:NCES.Info@rti.org) for assistance with the DataLab tools. Users are encouraged to explore the learning resources provided before contacting the Help Desk.

### **Slide 20 of 20**

This module introduced important data analysis tools available from NCES: The DataLab data tools, including the Tables Library and PowerStats. This module identified the studies available for analysis using the DataLab data tools, described features of the DataLab website, and provided an overview of the Tables Library and PowerStats.

This module has also provided resources that can be accessed through the DataLab website.

You may now exit the module.