

Report and Suggestions from IPEDS Technical Review Panel #49: The Public Face of IPEDS: Web Tools and Publications

SUMMARY: The Technical Review Panel reviewed IPEDS tools and publications and considered a number of potential changes to improve or enhance the products for users. Comments from interested parties are due to Janice Kelly-Reid, IPEDS Project Director at RTI International, at ipedstrpcomment@rti.org by September 19, 2016.

On July 12 and 13, 2016, RTI International, the contractor for the Integrated Postsecondary Education Data System (IPEDS) web-based data collection system, convened a meeting of the IPEDS Technical Review Panel (TRP) in Washington, DC. Meetings of the IPEDS TRP are conducted by RTI to solicit expert discussion and suggestions on a broad range of issues related to postsecondary education and the conduct of IPEDS. The TRP is designed to allow the public to advise and work with RTI to improve IPEDS data collection and products, data quality, and user-friendliness. The TRP does not report to or advise the Department of Education.

RTI's specific purpose for TRP 49 was to discuss IPEDS web tools and publications and how potential changes would impact institutions, researchers, and the Department of Education. The panel consisted of 43 individuals representing institutions, researchers and other data users, state governments, the federal government, higher education associations, and other experts.

Background

NCES activities are designed to address high-priority education data needs; provide consistent, reliable, complete, and accurate indicators of education status and trends; and report timely, useful, and high-quality data to the U.S. Department of Education, the Congress, the states, other education policymakers, practitioners, data users, and the general public. NCES distributes IPEDS data through a variety of data release methods that distill IPEDS products into two different categories: web tools and publications. Together, the web tools and publications form a comprehensive suite of IPEDS data products for the public. RTI convened this TRP to engage the community in a discussion on how to better structure IPEDS data for utility in the industry, while considering the public needs and the skills of those working with the data. To that end, the panel was asked to review selected current and planned IPEDS products and provide feedback on better ways to present the data, products that could be retired, and additional tools or features that would facilitate more thoughtful research.

Assumptions About IPEDS Data Users

Different data users have different information needs and research abilities. For example, IPEDS data and data products are used by researchers to create research and information products; by consumers to seek institutional information to understand the marketplace; and by policymakers and regulators to understand institutional industry dynamics. The following assumptions about IPEDS data users provide context to the discussion about the needs of various audiences:

- **Assumption #1: Some users know a lot about postsecondary education.** These users think of postsecondary education from the perspective of a successful consumer. This works for many of the preformatted data tools but creates issues when this group uses data that are more administrative, particularly data from Finance and Human Resources survey components.
- **Assumption #2: Some users know a lot about statistics.** Users with extensive statistical knowledge tend to approach IPEDS data as something to be loaded or automated. These users often express frustration at how complex higher education data is to model.
- **Assumption #3: Some users know a lot about data structures and data systems.** These users want to put everything in a database and make queries and definitions to label all of the fields.

They often are frustrated with the level of intricacy in the definitions and how the data are both simply merged and wrongly interpreted.

- **Assumption #4: Some users know about IPEDS.** These users like to discuss the limitations of IPEDS and often miss out on what IPEDS has because they spend their time talking about what it does not have.

Discussion Item #1: IPEDS Web Tools

The first part of the TRP focused on a review of selected IPEDS public-facing dissemination products. The panel discussed the strengths and weaknesses of each product and considered potential changes that could improve or enhance the product for data users. The panel's feedback on each web tool is summarized first, followed by the larger discussion of the web tool products as a suite of tools.

College Navigator

NCES hosts College Navigator, a searchable website that provides up-to-date statistics on a broad range of postsecondary institutions for easy access by consumers. The tool provides comprehensive profiles for more than 7,400 postsecondary institutions in the U.S. and its territories. Most of the data come from IPEDS. Additionally, NCES makes available on College Navigator data provided by the Office of Postsecondary Education, the Office of Federal Student Aid, and the Department of Veterans Affairs for the purpose of disseminating information to consumers that are defined in statute.

College Navigator currently averages more than 124,000 visits (sessions) per month and ranks #2 on the list of top NCES web pages by usage.¹ With regard to the purpose of College Navigator and the advancement of technology, the panel was asked to consider whether College Navigator optimally meets the needs of the today's users—an issue that depends on the primary audience. Panelists recognized that while College Navigator serves multiple audience groups with a variety of data needs, the primary audience is undefined and should be identified. For example, is College Navigator a consumer-facing tool or a consumer accountability tool? The panel did not reach consensus on the answer but agreed that it is not the former at present. In their review of College Navigator, panelists also found that the comparability function is not obvious or intuitive. The panel suggested including guidance, in the form of a user guide brochure, to highlight the available features of the tool and provide caveats, disclaimers, and definitions of key terms (to reduce jargon for the intended audience). The panel also considered ways to improve the presentation of information to enhance the tool's usability. Panelists recognized that College Navigator—while user-friendly—is a dense tool, partially because it is legislated. Although users are provided with exhaustive results, the other side of exhaustive results is information overload. Given the large amount of information, panelists questioned whether the institution profiles should remain on one page.

Additional wish list items for consideration:

- College Navigator displays one year of data; consider linking College Navigator with the IPEDS Data Trends tool.
- Provide access to underlying data behind College Navigator through an open application programming interface (API).
- Link College Navigator back to College Map.

College Map (*Anticipated release—September 2016*)

NCES will host College Map, a mobile-friendly consumer information tool designed to help prospective students, parents, high school counselors, and others geographically locate potential colleges or universities through a select amount of information. This tool uses Esri basemaps and draws from the most recent year of available IPEDS data on more than 7,400 postsecondary institutions in the U.S. and

¹ Usage analytics on NCES web pages, 12-month average as of May 2016.

its territories. Users can search by school name, location (address, city, state, or zip), or major to visually identify matches and filter results to focus on a specific subset of institutions. The map dynamically and immediately changes when users select filters.

Though the tool is still in development and is untested by actual users, the panel was asked to consider whether College Map will optimally serve the needs of college-search users. In general, the panel had positive support for College Map and agreed that the user-friendly interface and social media features makes IPEDS data accessible and usable. Given the tool's focus on location and program as critical factors, it appears to align better with a target audience of place-bound and nontraditional students rather than traditional first-time, full-time students, who are the focus of many of the consumer information items on College Navigator. Accordingly, the panel suggested that NCES open College Map up to all types of consumers and bill the tool as a product for nontraditional students, adult learners, and graduate students. Panelists also agreed that the information displayed should be relevant and consistent with the needs of the target audience. For example, items like net price—though helpful for an audience of full-time, first-time students—would not be as helpful for nontraditional students or graduate students, who are more likely interested in program costs. The panel suggested aligning tuition with degree sought, with undergraduate degree as the default. The panel also suggested reducing jargon for the intended audience (e.g., align CIP Code descriptors with terms consumers use).

Additional wish list items for consideration:

- Link the mapping feature in College Navigator back to College Map.
- Consider making the source code open and available to the public.
- Add filter by multiple states.
- Identify and implement a solution for exclusively distance education institutions.
- Consider linking net price calculator to tuition and fees (for undergraduate programs only).
- Show graduate tuition for users searching for graduate degrees (rather than undergraduate costs for all).

Use the Data Tools

Use the Data (formerly the IPEDS Data Center) is the primary interface for disseminating IPEDS data to the postsecondary education, policy, and research communities. It is a centralized web-based tool that offers a range of functions for retrieving and analyzing IPEDS data. The panel's feedback on Use the Data functions² is summarized below. General comments on the Use the Data tool are included in the subsequent section.

Custom Data Files: Users can download a custom set of IPEDS data files for a subset of variables for one or more institutions. Data files are exported in zipped comma-separated value (CSV) format with read programs for importing into a statistical software package (SAS, SPSS, and STATA). The CSV file outputs configured for statistical software packages contain only the code values for categorical variables; labels for these variables are available in both the data read program files and the data dictionary for each file. Panelists pointed out that the basic CSV outputs configured for MS Excel and other spreadsheets do not automatically incorporate the variable title and value label for the variables that indicate the UNITID of the parent institution reporting data. The current CSV output file does not include variable title, only the variable name (i.e., `IDX_C`) and includes the code value (i.e., -2) rather than the value label (i.e., UNITID of parent institution or not applicable). Panelists also suggested providing the user with a history of selections used to create the custom data file (e.g., read file containing institution selection criteria).

² Use the Data functions not presented for TRP discussion include Look Up an Institution, Data Feedback Report, and Survey Data: Complete Data Files.

Additional wish list item for consideration:

- Allow for multiple-year selection in one data file.

Compare Institutions: Users can retrieve and compare IPEDS data for more than 7,000 institutions and up to 250 variables. The IPEDS variable tree comprises all existing IPEDS variables for all available data years grouped by subject area or topic. In general, the subject areas and topics are organized according to the IPEDS survey components from which the data were collected. Exceptions to this organizational structure include admissions and student charges variables that were pulled out of the Institutional Characteristics category and retention rates that were pulled out the Fall Enrollment category. Panelists noted that selecting variables for multiple years is a challenge because of changes to the survey forms, such as new race/ethnicity categories, new CIP code classifications, changes to award level classifications, and other new items added. The panel suggested simplifying the variable tree or considering alternatives without losing the functionality of being able to search by subject and show multiple years.

Additional wish list items for consideration:

- Enable users to customize the environment to their use.
- Make it easier to update the upload file (e.g., cloud-based file).
- Add a tool that allows users to create SQL Scripts.

Summary Tables (formerly known as Report Templates or Predefined Reports): This tool allows users to customize a summary table for a select subgroup of institutions on the following popular topics: tuition and fees, room and board, student financial aid, admissions, test scores, student enrollment, degree/certificate awarded, and graduation rates. Although this function produces packaged reports easily, options are limited, with 13 summary tables currently available. Panelists noted that there is no option to customize the report or include additional variables to enhance the analysis, and pointed out that users seeking more customized reports typically turn to a different function (e.g., Compare Institutions) to create reports to their own specifications; this may be why the function is not used. Panelists noted that in general, this function appears to be most applicable to more novice users seeking table templates or looking to replicate totals. Given the level of effort that goes into maintaining this function and its lack of use, panelists agreed that NCES resources would be better focused elsewhere and suggested eventually phasing out Summary Tables. If this function were to be eliminated, current users of this function (e.g., those seeking to replicate totals) would be better served by publications rather than a data tool.

Statistical Tables: Users can create tables with simple, descriptive statistics (e.g., total, count, mean, median, standard deviation, percentiles) on selected IPEDS institutions and variables. Users can calculate aggregate data for a selected group of institutions, produce aggregated totals in *First Look* publications and *Digest* tables, highlight a particular institution and weigh its variable values against aggregate data from a group of peer institutions, and select classification variables to view descriptive statistics for subcategories of institutions within a group. Panelists noted that the function, however, has the same navigation problems as the Compare Institutions functions and a 25-variable limit. Despite these limitations, panelists agreed that in general, this function appears to be a good, basic tool to provide descriptive statistics on all IPEDS variables and boilerplate peer analysis. The averages are currently unweighted. Panelists pointed out that weighted averages may not be applicable to all variables, but would be possible for select group variables. Weighting would require some differentiation and determination of where weighting makes sense.

Data Trends (formerly Trend Generator): Users can quickly view trends on most frequently asked subject areas including enrollment, completions, graduation rates, employees and staff, institutional revenues and expenses, and student financial aid. Using the provided subject area questions, users can limit variables and categorization options to create a trend based on custom selections. The tool is

updated with the most recent provisional data; results will match data published in *First Look* publications. A number of improvements are planned for Trend Generator 4.0, including the ability to display totals by row and column, create column-only tables, filter on more than one variable, use qualifying variables as filters, and include general (boilerplate) footnotes. Panelists agreed that Data Trends is a user-friendly tool and agreed that the tool could be made more accessible by eliminating jargon and using clear language.

Additional wish list items for consideration:

- Add an institution version of Trend Generator (e.g., select a group of institutions and place this into Trend Generator).
- Enable users to download the institutional data that made up the trends.
- Provide resources for interpreting the data (e.g., link to brochures and publications).

Download Access Database: To eliminate the step of downloading IPEDS separately by survey component or select variables, NCES makes available the entire survey data for one collection year in Microsoft (MS) Access format beginning with the 2011-12 IPEDS data collection year. The MS Access database provides multiple years of data in a consistent structure that enables users to write code for reports that they can reuse year after year with little to no code change. The targeted audience for this new tool is expert data users and researchers.

When downloading an IPEDS Access database, the file is compressed using WinZip and is accessible by a variety of statistical packages, including SAS, STATA, SPSS, MySQL, Microsoft SQL, and R. Each database contains the relational data tables as well as the metadata tables that describe each data table, the variable titles, descriptions, and variables types. Example tables, commonly used query samples, and schema are not included. Panelists agreed that providing training and tutorials on using the data could help reduce some of users' challenges with using the downloadable data. When downloading IPEDS data it is important to understand the difference between collection year and data year: collection year is the year in which NCES collected the data during the fall, winter, and spring data collections; the data year is the year the data actually represent, which may be prior to the collection year.) The panel also suggested providing instruction for value labels (e.g., bring down the database and write a macro that assigns values as labels). The panel suggested explaining the metatables in a ReadMe file to serve as a stand-alone reference that describes each table and provides a list of the variables.

Additional wish list items for consideration:

- If space is a limitation, consider offering concessions (e.g., supplemental package for queries, remove derived variables).
- Provide older years of data and give access to data prior to 2011 with documentation of the optional years and derived tables.

Use the Data—General Comments

Additional wish list items for consideration:

- Offer a better way to present the data dictionary as a web-searchable platform.
- Provide documentation for the front end on what users get on the back end (for all data tools).
- Provide access to sets of yearly crosswalk files. The merged and closed options are identified in the code, but the challenge is that crosswalks have not been through a statistical review.
- Offer provisional/final data from 2008 to current; and prior to 2008 (pre-2007).
- Consider adding a new derived variable to identify states in regional compacts.

Web Tools Suite

The tools should be clear to their intended audience. Improvements can be made by providing resources to help data users triage how to find the answers they need. For example, panelists suggested providing user guides for each tool (which would include caveats, disclaimers, and instructions) and on the IPEDS website listing the tools in order from most to least complex to guide novice users through the progression of tools. Table 1 provides IPEDS products by complexity and user level. After discussing the web tool products, panelists found no gaps in coverage of tools and called for the elimination of tools that are not widely used. Based on a thorough review of the Use the Data functions, panelists suggested retiring the Summary Tables to refocus NCEs resources on other efforts, such as emphasizing application programming interface (API), creating training opportunities, and providing tools with a modern look and feel. Also, panelists noted that the Custom Data Files and Compare Institutions functions have overlapping applications. Merging these tools into one (more powerful) function would reduce duplication of resources and work. Panelists suggested that before tools are retired, warnings of impending elimination should be issued so that users have time to switch to other tools.

Table 1. IPEDS products by level of complexity and user levels

User level	Level 1: Low level of complexity	Level 2: Intermediate level of complexity	Level 3: High level of complexity
Novice	<ul style="list-style-type: none"> College Map College Navigator 	—	—
Intermediate	<ul style="list-style-type: none"> Data Feedback Reports¹ NCES publications (Digest, Condition of Ed, First Looks, Web Tables, etc.) 	<ul style="list-style-type: none"> Data Trends Statistical Tables 	—
Expert	—	—	<ul style="list-style-type: none"> Custom Data Files/Compare Institutions IPEDS Access Database

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¹ This product was not discussed in TRP #49, but is available in suite of Use the Data tools.

Discussion Item #2: Publications

The second part of the TRP focused on a review of selected publications and reports that utilize IPEDS data. The panel discussed the strengths and weaknesses of each product and considered potential changes that could improve or enhance the product for users. The panel’s feedback on each product is summarized first, followed by the larger discussion of the products as a suite.

Publications and Products Website

The publications and products website hosted by IES/NCES is a centralized location that organizes and archives IPEDS-related publications and data products dating back to 1980. Items are grouped into five high-level topics (i.e., Data Products, Reports, Shorter Publications, Technical/Methodological, and Working Papers) in an expandable and collapsible tree-like organization. Panelists suggested recategorizing publications by subject area or topic, similar to the variable tree in Use the Data. Panelists also suggested listing publications using graphic images of the covers—especially for those publications that have familiar cover branding. Outdated publications and products should be moved to an archival section and current (or “just released”) products and publications should be highlighted as such. Publications and products that are released annually should be listed once with an expandable drop-down category to select from previous years.

Web Tables and Table Library

The College and Career Tables Library provides detailed summaries of the data in the form of tables and highlights important findings from new data. NCES sample surveys and IPEDS-related tables are combined in one library, which contains all web tables published for the postsecondary surveys and compendium/state tables. The IPEDS tables draw from final reviewed data, and although they do not

match publications (which use provisional data), they match the Use the Data final release files. In general, panelists were unsure of the target audience who would be best served by the data. The long review process makes for noncurrent tables (e.g., 2012 tables were released in 2015) and long and redundant titles make locating them a challenge. While the tables help NCES staff respond to specific questions from users and decrease the burden on NCES customer service, the panel was unsure of their value for the data user community. If NCES continues to maintain the library, panelists recommended a modified interface with table creation function for users.

IPEDS Brochures (Under development)

IPEDS brochures are public-friendly publications written for a target audience of users who are interested in postsecondary data but are unfamiliar with the IPEDS collection. This is a broad audience that includes policy makers, Capitol Hill staffers, federal and state agencies, college presidents, members of the press, parents and students, beginning researchers, and others. The brochures provide an overview on a selected topic and use graphics to simplify the explanation of concepts. In their review, the panel considered whether NCES should narrow the scope of the publication and agreed that the brochures are most effective when used as a general resource that broadly covers key concepts and data. In general, the panel agreed that the brochures will help to encourage more consistent, informed, and appropriate uses of IPEDS data. While some topics or key terms may be too technical, the brochure should be looked at as a tool that invites conversation and serves as a resource.

Current brochures in development include Graduate Rates, Media Primer, and Postsecondary Surveys. Planned future topics include data reporting functions and data dissemination functions; IPEDS measures of success; most frequently accessed survey components; and IPEDS statistics (derived variables and other analyses available). Additional topics suggested by the panel include College Navigator, differences between headcount and full-time equivalent, and retention rates. NCES plans to make the brochures available for download in PDF format from the IPEDS website or printed and distributed at conferences. The panel also suggested making the graphics publicly available via social media.

Statistics in Brief

Statistics in Brief (SIB) publications present descriptive data in tabular format to address simple and topical issues and questions. The IPEDS SIBs go beyond *First Looks* and focus on a particular area, moving away from template language to explore IPEDS data descriptively. Very few IPEDS SIBs, however, have been produced lately; the last IPEDS SIBs were published in 2009 and 2011. Panelists considered whether NCES should invest in producing IPEDS SIBs. While this presents an opportunity for NCES to contribute to the field, it also raises a Department strategic question for NCES about crossing the lines from its role of providing data into interpreting data; in which the role of interpreting the data should be left to U.S. Department of Education's Office of Planning, Evaluation and Policy Development.

Condition of Education and Digest of Education Statistics

The *Digest of Education Statistics* provides a compilation of statistical information covering the broad field of American education from prekindergarten through graduate school. It includes a selection of data from many sources, both government and private, and draws especially on the results of surveys and activities carried out by NCES. Panelists suggested addressing gaps in the current coverage by using IPEDS and other outside sources to develop tables on particular populations, such as veterans. Panelists also suggested moving away from static reports to make the data more accessible and user-friendly. For example, link *Digest* tables to source data or provide the underlying data in a downloadable format-free MS Excel file (or mini-file) or via API.

The Condition of Education (COE) is a congressionally mandated annual report that summarizes developments and trends in education using the latest available statistics. Panelists suggested using terminology consistent with the IPEDS survey components and in the text of the indicators addressing

known limitations to the data. For example, clearly label graduation rates as the rate from the first institution attended for first-time, full-time degree/certificate-seeking undergraduate students and note that students who transfer out without completing a degree and then complete a degree at another institution are not included in these rates. Panelists suggested that NCES consider producing additional indicators that are specific to institution type (e.g., include more transfer measures for 2-year institutions).

Panelists noted that both the *Digest* and COE provide historical trends but are not reflective of the changing nature of postsecondary institutions (i.e., traditional 2-year institutions that offer one or more programs at the baccalaureate level) or the complexity of student movement and transfer patterns. Panelists noted that NCES longitudinal data from the Beginning Postsecondary Study would address the swirling nature of students' path to a degree, but further study is needed on institutional groupings and how changes would impact historical trend data.

First Look Reports

NCES *First Look* reports accompany the preliminary and provisional data releases for each IPEDS collection cycle. They introduce new data through tables and present selected findings that demonstrate the range of information available through IPEDS. They are intended to help ensure timely release of data and provide a bibliographic reference to the data release. While only a few of the data from a given collection are displayed in the reports, all data from the collection are publicly available through Use the Data. Despite attempts to simplify *First Looks* and expedite their review, their approval is subject to multiple steps in the review process and delays the release of the data. Replacing the *First Look* publication with a data tool (e.g., a *First Look*-Compendium hybrid) or analytic tool with downloadable data would facilitate a more timely data release by eliminating a level of NCES review. Though there was broad agreement that more timely data would be preferable, panelists noted that the *First Look* reports are the last quality control step in the process of data release. The most important thing is maintaining data integrity when data are released. Panelists suggested that the reports could be more useful by facilitating user access through the web (e.g., publish tables with downloadable data in a *First Look* data portal), rather than through a static publication.

Publication Suite

After examining the publications and data products to identify gaps or redundancies, the panel noted that the proliferation of tables that appear across multiple products may lead to confusion and misinterpretation, particularly if the tables were designed for different purposes. The panel suggested developing an inventory or overview map to document the information available through the publications. For example, additional information could be provided on table specifications (e.g., IPEDS tables present data collected from Title IV institutions, the *Digest* tables present data collected from degree-granting Title IV institutions). To improve the utility of the data products and facilitate more thoughtful research the panel suggested providing a tool that allows users to reproduce published tables that can be further customized.

Next Steps

Once the TRP summary comment period has closed, RTI will review the comments and outline recommendations for NCES based on the outcome of the TRP meeting and subsequent public comment period. NCES will review the recommendations to determine next steps.

Comments

RTI is committed to improving the quality and usefulness of IPEDS data. We encourage interested parties to send any comments or concerns about this topic to Janice Kelly-Reid, IPEDS Project Director, at ipedsTRPcomment@rti.org by September 19, 2016.