



Connecting Students to the World of Work

Evaluation Mini-Guide #5: DATA MANAGEMENT

This mini-guide is one of a series designed to provide recipients of the OAC's Connecting Students to the World of Work grants with guidance for conducting evaluations of their funded programs. Each mini-guide offers basic information on a specific topic to help grantee organizations build capacity to implement evaluation activities.

This mini-guide focuses on data management. *Now that we have collected data, what do we do with them?* Data management refers to ways to record, organize, store, and secure the data and encompasses issues such as developing a data management system, establishing data entry protocols, and ensuring data security. Good data management will create efficiencies, save time, and improve the integrity of the analyses and findings.

The content in this mini-guide builds upon concepts discussed in the preceding mini-guides. Data are collected via instruments such as surveys or interviews (see Evaluation Mini-Guide #2: Measurement Methods and Tools) and the collection follows an established protocol (see Evaluation Mini-Guide #4: Data Collection). The data management system that is best for you will depend upon factors such as the type of data you are collecting (i.e., quantitative, qualitative), available resources (e.g., funds, staff members' skills), and planned usage of the data (i.e., desired analyses, reports). This mini-guide addresses some of these key factors.

How do we manage our data?

There are several options for data management. Choosing the right one for you depends, in part, on the type of data you have. There are two types:

- **Qualitative data** include descriptive comments or stories gathered through interviews, focus groups, or open-ended survey questions. They can also include products such as video journals or art projects. These data are typically stored on videos, audio recordings, photographs, and/or paper transcripts. Qualitative data can be reviewed and given numeric codes for analysis and can also be stored in databases.
- **Quantitative data** are numeric data generally gathered through surveys or existing administrative records. For example, surveys might ask participants to estimate frequencies or amounts (e.g., how often s/he visited a museum in past year, or number of performances) or to rate items on a 5-point scale (1 = strongly disagree to 5 = strongly agree). Administrative data might include ticket sales, attendance rates, graduation rates, grades, and other information tracked systematically.

Good data management includes the use of a codebook (or data dictionary) that explains the numeric codes assigned to the values for all of the variables (for both quantitative and numerically-recoded qualitative data). Such data require a system that records the numbers in a way that is accessible for analysis and reporting. Common management methods include spreadsheets, online survey programs, and databases.

Spreadsheets, available through programs such as Microsoft Excel and Google Drive, require data to be manually entered. A written data entry protocol should be established to minimize data entry error by ensuring that variables are defined and that anyone entering the data will use the same codes.

Pros: Inexpensive; accessible programs (e.g., Microsoft Excel); easy to enter data.

Cons: Analysis options are very limited and must be done manually; reporting is not auto-generated; security can be low; difficult to track high numbers of participants (>50).

Online survey programs (e.g., Survey Monkey, Survey Gizmo, Google Forms) provide an option to administer surveys via the Internet.

Pros: Convenience of internet administration; built-in tools for basic analysis and reporting; can include a function to extract data already formatted into an analyzable spreadsheet.

Cons: Response rates for on-line surveys tend to be lower than in-person surveys; requires Internet access to enter and manage data.

Relational databases (e.g., MySQL, FileMaker Pro, Microsoft Access) are a specially designed software applications that interact with the user, other applications, and the database itself to capture and analyze data.

Pros: Analysis and reporting are easier; reports can be auto-generated; data can be managed in specific ways, such as tracking individual participants' responses over time; easy to enter data.

Cons: More expensive; require specific skill set to build and maintain.

How do we determine which data management option is best for our program?

When choosing among possible data management systems, consider the following questions:

- How will we use the system? (e.g., For ongoing program monitoring? Who will be in charge of the data entry, management, analysis, and reporting?)
- What do we want the system to do? (e.g., What kind of tracking does our program need? Do we want automated reports? Do we need analytic capability?)
- What is our budget, including ongoing support and potential time lost during implementation?
- Who in our organization will be administering the system, and what kind of training will they need?
- Is this software solution flexible enough to grow with our organization?
- How much time are we willing to invest in this system and making sure employees are trained?

What resources are required?

The primary resources necessary are (1) funds and (2) staff skills and time. In one example, a spreadsheet would be a low-cost solution but would necessitate that a staff member or outside consultant is continually available to conduct data analysis and prepare reports. In another example, a relational database would be more expensive and time intensive to set up, but analysis and reporting over the longer term would require little effort.

Where can we find more information?

NTEN is a nonprofit technology network and a place to find vendors and information: www.nten.org

“Choosing a Database for Your Organization”: databases.about.com/od/administration/a/choosing_a_db.htm

DON'T FORGET to secure and back up your data!

No matter which data management system you choose, you must make sure that the data are secure for both the integrity of the evaluation and to protect the confidentiality of the participants. (See Evaluation Mini-Guide #3: Permission and Confidentiality for information on how to keep data secure and confidential.)

You can ensure the security of your data by regularly saving and backing up your data files. Create a folder specifically for back-up files, and save updated files often. Before making changes to your data file (whether for analyses or data cleaning), save two versions of the raw data file with the current date—one to the back-ups folder and one to the main folder. If any data are accidentally deleted or incorrectly entered, you can return to your back-up file to correct the error. Naming each file with the current date will help keep them organized.