

Tip Sheet

How to create accurate and user-friendly tables, charts, and graphs

Tools for creating charts and graphs

There are many different types of software you can use to create charts and graphs. The table below lists a few of the tools most commonly used in local evaluation work.

Program	Advantages	Disadvantages
Microsoft Excel	<ul style="list-style-type: none"> ▪ Convenient if your data are already in an Excel spreadsheet ▪ Readily available (included in MicrosoftOffice; older versions work fine) ▪ Offers many options for different types of graphs (bar, line, pie, etc.) and visual elements (colors, line weight, data labels, font, etc.) ▪ Graphs can be pasted into Word documents or PowerPoint presentations 	<ul style="list-style-type: none"> ▪ Some default options create cluttered graphics ▪ Requires moderate level of skill and experience to use effectively ▪ Graphs are “frozen” once they are pasted into Word (must go back into Excel to revise them)
Microsoft PowerPoint	<ul style="list-style-type: none"> ▪ Can create graphs directly in a presentation (allows you to enter data into a spreadsheet), or can insert graphs from Excel ▪ If created directly in PowerPoint, the size, scale, colors, and fonts can be easily integrated into the presentation for a consistent look 	<ul style="list-style-type: none"> ▪ Some default options create cluttered graphics ▪ Requires moderate level of skill and experience to use effectively
SurveyMonkey*	<ul style="list-style-type: none"> ▪ Visually appealing (clean, uncluttered) ▪ Easy to create 	<ul style="list-style-type: none"> ▪ Less flexibility and control over visual elements and content (compared to Excel) ▪ “Create Chart” and “Summary Report” features generate graphs in PDF, making it difficult to integrate into a Word document or PowerPoint presentation

*SurveyMonkey allows you to create graphs in three different ways in the Analyze Data tab: 1) Create stand-alone graphs in “View Summary > Create Graph;” 2) Bar graphs are included in “Download Responses> Summary Report> PDF;” and, 3) Excel graphs are included in Excel downloads in “Download Responses> Summary Report> Excel”

When it comes to charts and graphs, less is more

- Put detailed results in tables and use charts and graphs to emphasize key findings or to present results that are easier to understand in a visual format
- Charts and graphs should be as simple and clean as possible in terms of visual style and content.
- Remove clutter (any unnecessary visual elements)
- Collapse categories and/or categorize continuous data to avoid overloading the graphic with too many elements
- Use color to clarify, not to be “splashy”

- Use different colors to highlight important conceptual differences that tie directly to your evaluation questions or ABCDE outcome statements (such as, orange= pre-program, green= post-program)
- Use consistent colors throughout a series of graphs (such as, blue= School A, green= School B— throughout the report or presentation)
- If you cannot use color, use varying shades of black/gray and avoid using several different patterns

Tips for cleaning up the clutter in Excel graphics

Many of the default options in Excel lead to cluttered, difficult-to-read graphics. Here are some ways to “turn off” or change these options:

- Get rid of the gray background (double-click on background, select “none” buttons for border and area)
- Get rid of grid lines if using data labels (double-click on lines, select “custom” and make the lines white so they don’t show up), or de-emphasize grid lines with light weight and light colors
- Get rid of bar borders (double-click on bars, select “none” for border)
- Delete legends if they unnecessarily duplicate in the axis labels or data labels
- Round numbers up (too many decimal points clutter the graphic)
- All bar graphs should have a zero baseline
- Do not use 3-D
- Increase font size from 10-point to 12 or 14-point if you will be pasting the graphic into Word or PowerPoint

Note: Some of the tips above are from the training session *How to Avoid Graphical Mistakes* by Naomi B. Robbins (www.nbr-graphs.com/index.html).

Labels and Legends: Tell the reader what they are looking at

Providing clear titles and labels in your tables and graphs will help to make it easier for the reader to understand your data, and will have the added benefit of documenting what was included in your analysis so that you or another staff person can replicate the analysis in the future.

In order to tell the reader what they need to know about your data, all tables, charts, and graphs should include the following information:

- A title that briefly describes the data
- The sample size or the number of respondents or participants included in the data (for example, “n=132”)
- Dates the data were collected (for example, “Surveys collected throughout the 2011-12 school year”)
- Labels that identify the type of descriptive statistic that is being displayed (number, percent, mean, etc.) and the “unit of measure” (such as, “percent of *active participants*,” or “number of *school districts*,” or “average *hours* of screen time,” or “*annual amount of dollars* raised.”)
- Provide the data sources if the table/graph will be in a document with results from more than one source (for example, “Source: 2011 Media Literacy Pre/Post Test Survey”)