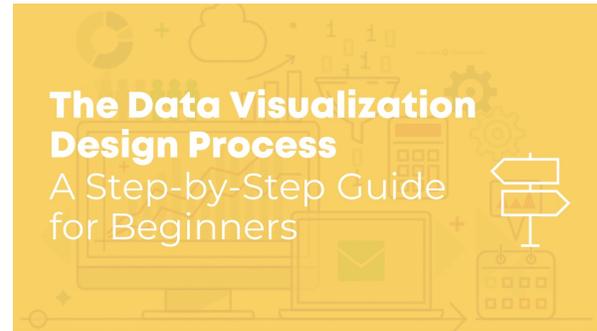


# The Data Visualization Design Process: A Step-by-Step Guide for Beginners



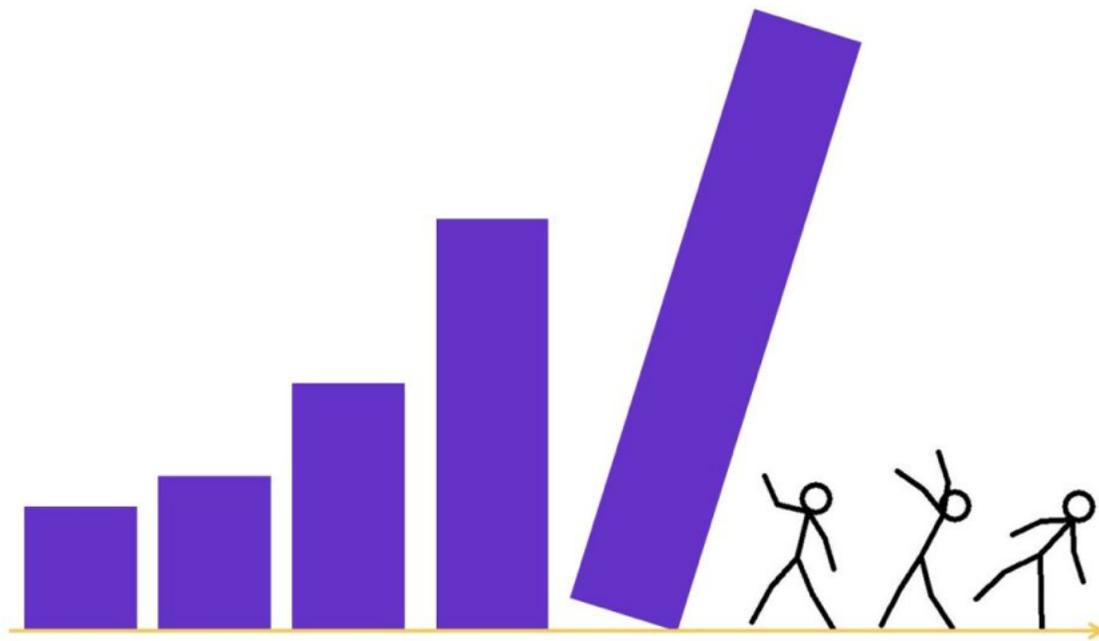
**ANN K. EMERY**

Updated on: May 1st, 2014

Data Visualization

[Audience](#), [Before/After Data Visualization Makeovers](#), [Branding](#), [Chart Choosing](#), [Color Vision Deficiencies](#), [Dashboards](#), [Data Visualization Checklist](#), [Declutter](#), [Direct Labeling](#), [Dissemination Format](#), [Featured](#), [Grayscale](#), [Handouts](#), [Infographics](#), [Saturation](#), [Sketching](#), [Slidedecks](#), [Slidedocs](#), [Text](#), [Titles](#), [YouTube](#)

Visualizing data in charts, graphs, dashboards, and infographics is one of the most powerful strategies for getting your numbers out of your spreadsheets and into real-world conversations. But it can be overwhelming to get started with data visualization. Does data visualization leave you feeling like the numbers are about to topple over on you?? If so, this step-by-step data visualization guide is for you! I'll walk you through the data visualization design process so you know what to do first, second, and third as you transform your spreadsheets into stories.



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## Step 1: Analyze Your Audience

Wait! Don't start making graphs on your computer! First, we have to do some planning. A little bit of up-front planning will save you hours of

blood, sweat, and tears in the long run.

First, you need to analyze your audience. Who, exactly, is going to be using the data to make decisions?

Analyzing your audience is the least linear of all the thinking steps in the design process. Rather than relying on computer software or your programming skills, this step involves the most valuable computer of all—*your brain*.

## **Who is Your Audience?**

Your audience should be your primary consideration. A chart designed for a group of foundation program officers will not be appropriate for a group of high school principals, and vice versa. List all your audience types on a piece of paper, or a whiteboard, or in a spreadsheet, or even on the back of a napkin. Share the list with your colleagues and make sure you're on the same page. Have you reached consensus about who you're targeting with your data?

## **What's Your Audience's Numeracy Level?**

Do they enjoy or fear data? Unless you're designing charts for a group of economists or statisticians, you can usually leave out details like the effect size, power analysis, and margin of error. Laypeople are often more interested in practical significance (the "so what?" and implications of findings) than in statistical significance.

## **What's Your Audience's Data Visualization Familiarity Level?**

If they're brand new to dataviz, stick with the traditional charts like pie charts, bar charts, and line charts—otherwise they'll spend more timing ooh-ing and aah-ing over the chart's novelty than paying attention to the information contained in the chart.

## **How Much Time Does Your Audience Have?**

Little time or interest: Simple static chart. Lots of time and interest: Interactive charts.

## **What Types of Decisions Does Your Audience Make?**

What information do they need? What information do they already have? What information are they expecting? How will your chart(s) add value for them? If you can't think of how your chart will add value for the readers, *don't make one*. Every chart needs a purpose and so *what?*

## **How Much Precision is Necessary?**

As the data visualization designer, you have the freedom (and responsibility) to select how much precision is necessary. Your selection should be well thought-out and intentional. Your decision plays out in two ways: the chart type you select, and how you label the data points.

When selecting chart types, remember that some charts are better than others in displaying precision. For example, charts that rely on angles and area to show differences, like pie charts, are for communicating general patterns. Charts that rely on length to show differences, like bar charts, are for communicating specific details.

## **How Many Decimal Places Are Necessary?**

A related decision is how exact your data labels will be. Will you include decimal places? How many?

In most scenarios, you can safely round your decimal places to the nearest whole number. Your audience is rarely using the tenths, hundredths, or thousandths place to make decisions.

## **Are My Viewers Expecting a Story?**

Think about [whether your audience is expecting you to tell a story with data—or not](#).

## Are Viewers Expecting a Story in Your Data Visualization?



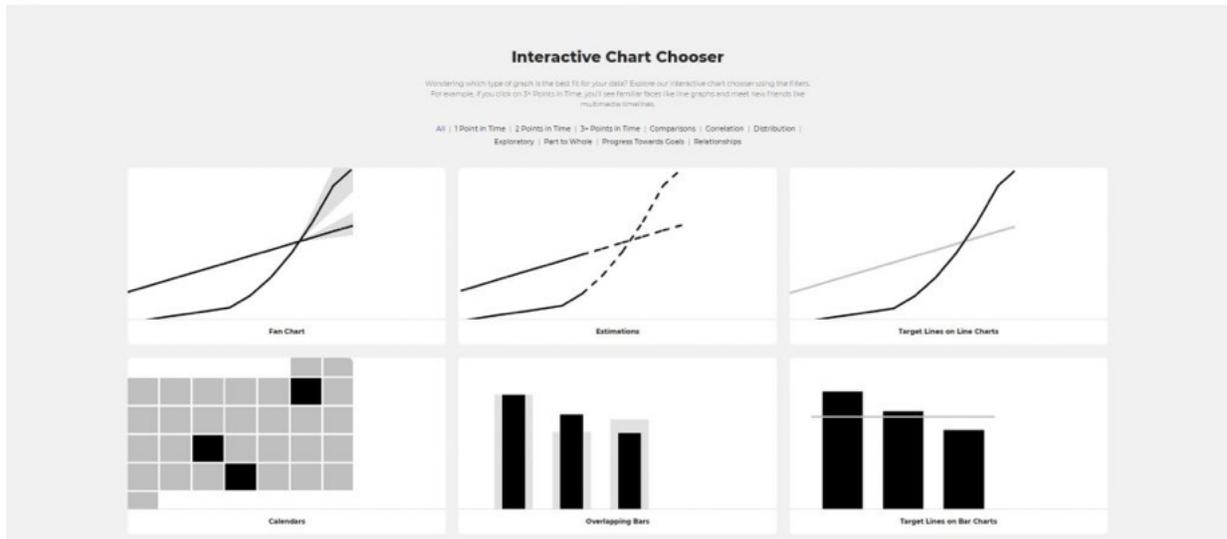
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### **Step 2: Choose the Right Chart**

It takes a while to understand all the different chart types and to pick the best one for your desired takeaway message. There are tons of great graphs to choose from!

#### **Consult a Chart Chooser**

My [interactive Chart Chooser](#) includes dozens of chart types, resources, tutorials, and templates.



## New to Dataviz? Start with Classic Chart Types

If you're not sure which chart to use, stick with classics like the [bar chart](#) to compare categories and the [line chart](#) to visualize how things change over time. These charts will be “right” most of the time, so they're a safe bet.

### Use Pie Charts Sparingly

Contrary to popular belief, pie charts are not evil and don't have to be avoided altogether. I have [seven guidelines for using pie charts and donuts](#). In [this pie chart makeover](#), I show you how to transform a 3D pie chart with way too many slices into a storytelling bar chart with icons:

## Pie Chart Makeover: From a 3D Pie Chart into a Storytelling B...



## Getting Comfortable with Dataviz? Branch Out and Try Other Chart Types

Once you've mastered the classic chart types, you can play around with less-familiar chart types like [bubble charts](#), [bullet charts](#), [dot plots](#), [heat maps](#), [scatter plots](#), [slope graphs](#), [social network maps](#), [tree maps](#), [waterfall charts](#), and more.

## Surround Yourself with Positive Inspiration

Surround yourself with great graphs so you can expand your worldview of what's possible with data visualization. I suggest following top-notch data journalism teams like [@PostGraphics](#), [@NYTgraphics](#), and [@WSJgraphics](#).

You can even create a physical or digital library of great graphs. For

example, you might print full-page, full-color charts and tape them near your desk. Surrounding myself with a variety of chart types, all of which have been used in different reports and for different groups of people, helps me create brand new charts easily. All I do is glance up at my gallery, and then I quickly figure out which chart is best for my new situation.



## Dive Into Your Dataset with Exploratory Data Visualization Techniques

I also use exploratory computer strategies, like Microsoft Excel's [spark lines](#), [data bars](#), and [conditional formatting](#), to help me narrow down the focus of my charts.

### Spark Lines

Here's a tutorial that shows you how to get started with spark lines:

## How to Insert Miniature Line Graphs Called Sparklines



### **Data Bars**

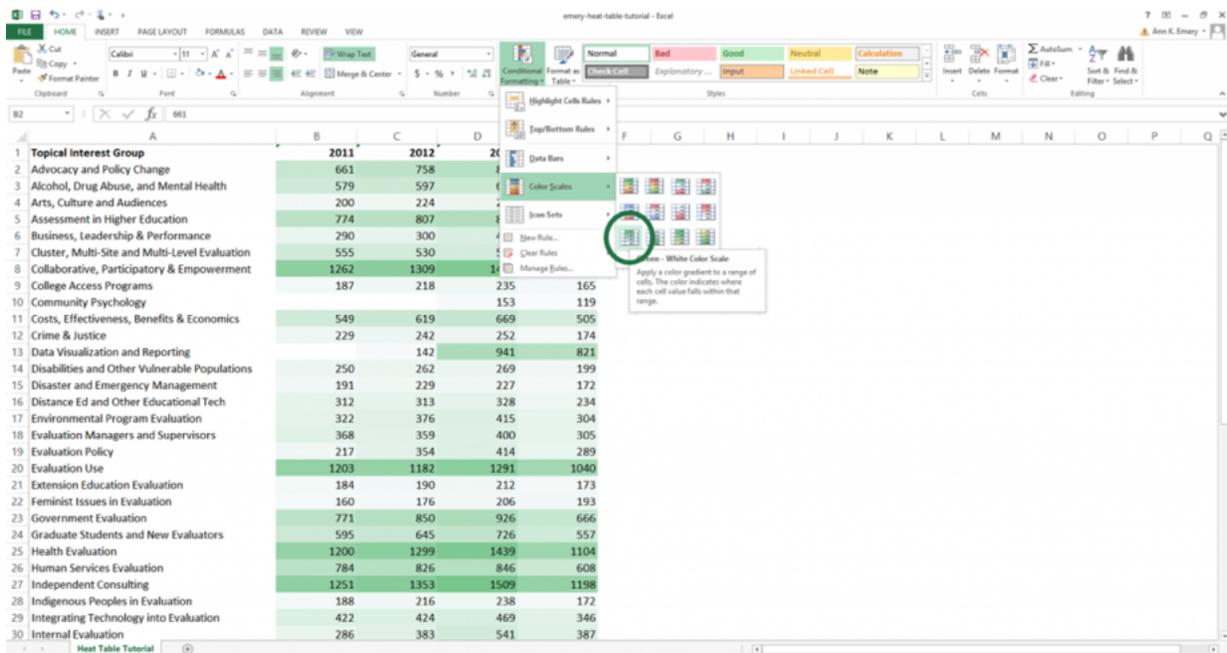
And here's a tutorial that shows you how to get started with data bars:

## How to Insert Miniature Bar Charts Called Data Bars



### **Conditional Formatting**

You can set up rules in your spreadsheet that automatically change the color of certain cells based on their values. I regularly use heat tables to scan my dataset for patterns. You can follow [my step-by-step tutorial to make heat tables for your data](#).

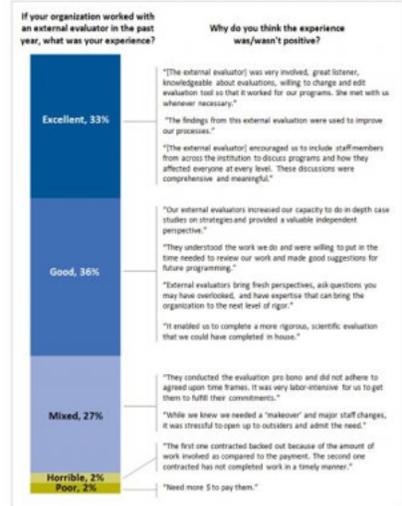
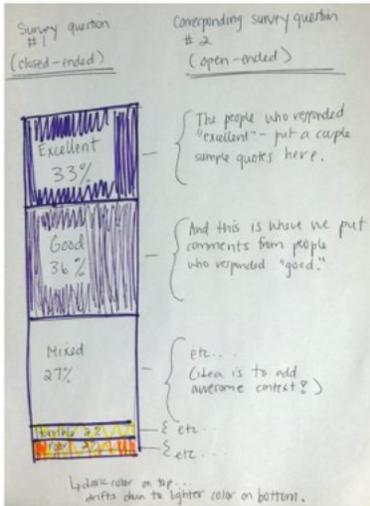
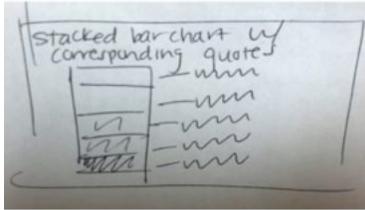
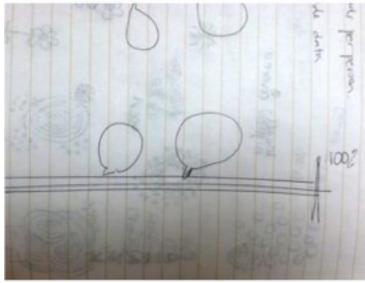


## Dive Into Your Dataset by Sketching Rough Drafts on Paper

Step back from your software program. This is especially crucial if you're using Excel or R (versus Tableau) where you usually need a solid idea of your chart's design *before* implementing that design on the computer.

I [sketch, draw, and doodle](#) plenty of drafts before I create anything on the computer.

Here's how it works: First, sketch plenty of rough drafts on paper. Give yourself permission to doodle as many drafts as you need. Share drafts with colleagues early and often. Gather as much feedback as you can. Next, create one or two of those promising drafts on the computer. Finally, edit, edit, edit! Put your easiest-to-follow chart in your final presentation or report. You might sketch five or more drafts. Only the single best chart will survive the editing process.



## Step 3: Select a Software Program

Once you've got a rough mental idea of what your visualization might look like, sit down and build the first draft of your visualization on the computer.

There are dozens of software programs available for building data visualizations. Some are free. Others are low-cost. And others are quite costly, at least for smaller organizations.

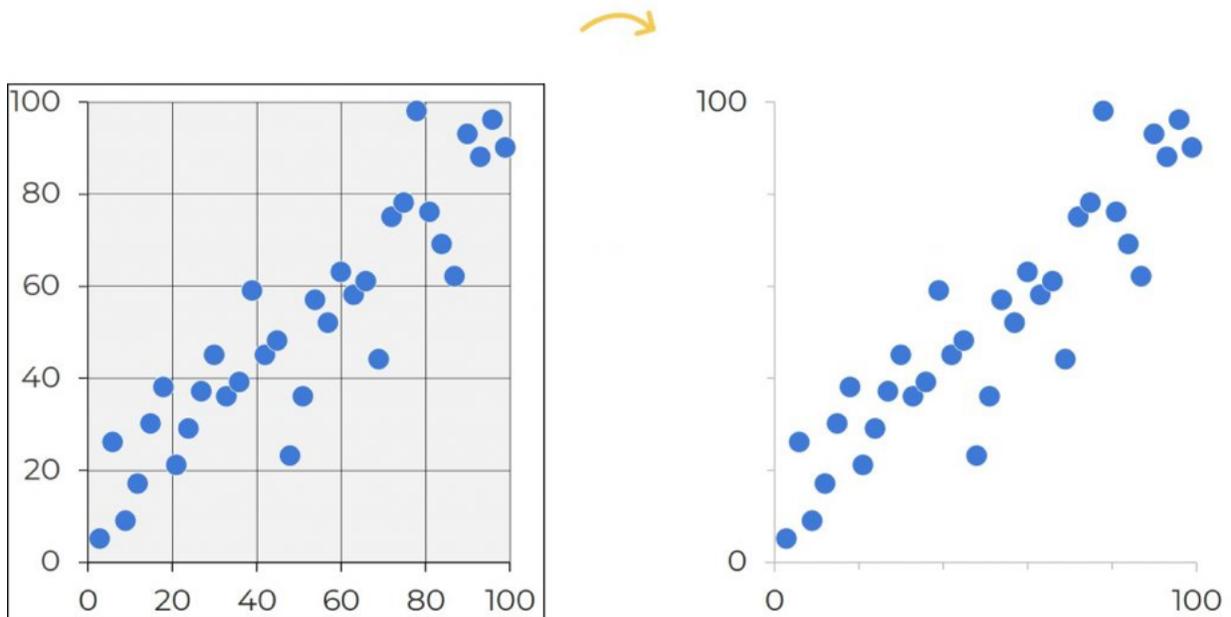
## Step 4: Declutter

After you've got the first draft of your data visualization created on the computer, it's time to refine your visualization and make your message shine. No computer program is perfect. You'll have to roll up your sleeves and make intentional edits no matter which software program you're using. The very first edit I make is to declutter my visualization. Software programs come with way too many borders, lines, and unnecessary ink. Examine each and every speck of ink on the chart. Does it have a specific purpose? If you can't articulate a reason for that ink, you don't need it.

## Apply the Squint Test

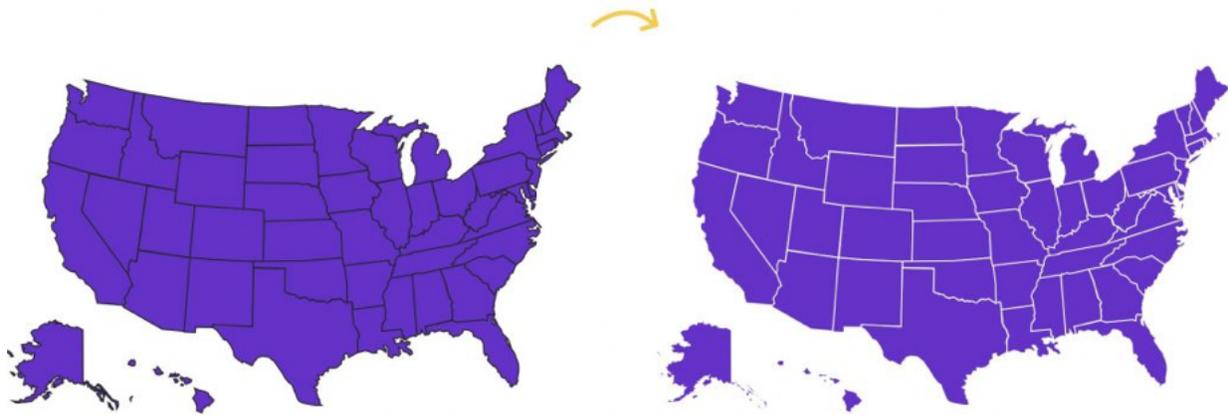
In these *before* scatter plot on the left, the cluttered appearance distracts us from the data. All these extra lines make the charts look overly scientific—and outdated. In the *after* version on the right, I removed the background shading and borders. I kept the x and y axes and some of the grid lines, but I intentionally changed the black ink to gray ink.

How do you know when you're done decluttering? Apply the Squint Test. Here's how it works: Squint your eyes so that you're peering at the chart through your eyelashes. Everything should look a little blurry. Can you see the overall shape of the data? For example, you should be able to tell if a line chart is jutting upwards or downwards over time. If not, try removing more clutter.



## Outline Shapes in White

Sometimes reducing clutter means outlining shapes in white, rather than black, so that they match the chart's background color.



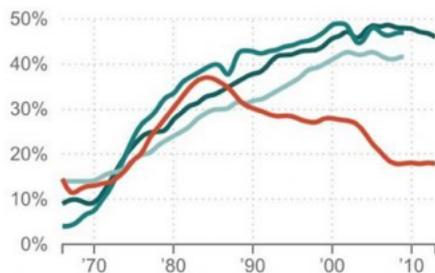
## Delete Legends and Directly Label the Data

Although we're used to seeing legends, we rarely need them. Legends can lead to unnecessary zig-zagging around the screen or page, and legends can also be difficult to interpret if your graph is printed in grayscale. Instead of using legends, directly label the data. *Direct labels* mean that you add labels as close as possible to the data. For example, in a line graph, you would delete the separate legend and place the category labels off to the right of each line. For bonus points, color-code the text in the labels to match the line.

### What Happened To Women In Computer Science?

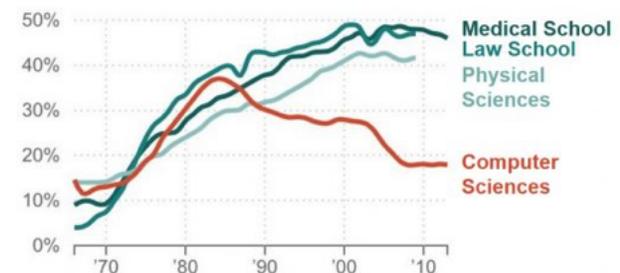
% Of Women Majors, By Field

■ Medical School    ■ Law School  
■ Physical Sciences    ■ Computer science



### What Happened To Women In Computer Science?

% Of Women Majors, By Field



## Step 5: Clarify Your Message with Color

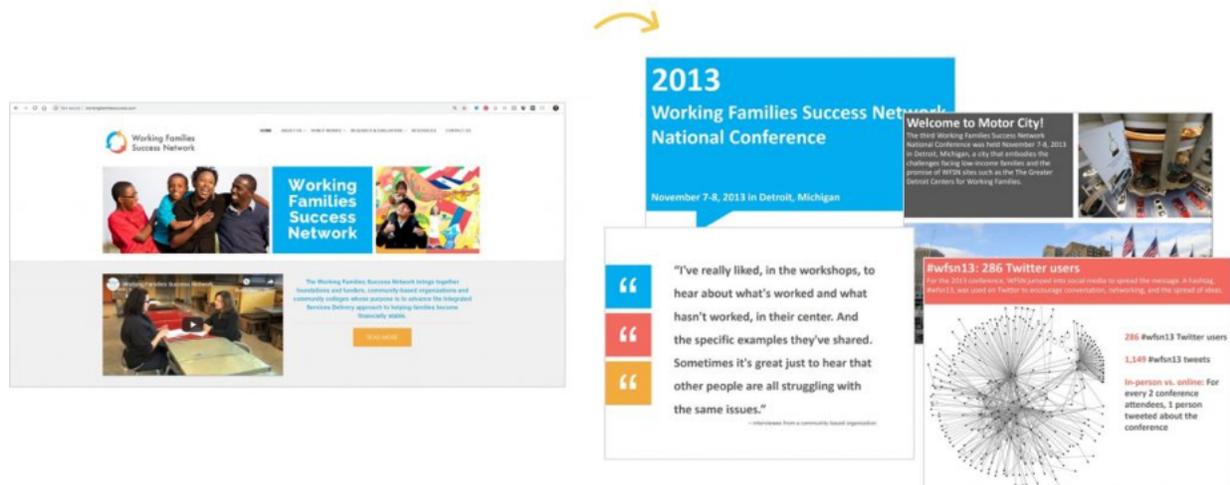
Colors are one of the most powerful elements of a chart, so choose wisely. There are a couple steps to choosing colors. First, select a color

palette to match your client's look and feel. Second, guide the reader's eyes and attention with your action color.

## Brand Your Visuals with Custom Colors

I'm begging you! Do not use the default colors from Excel, Tableau, or Google Charts. Nothing screams *novice!* or *2002!* more than default color schemes. If you're designing charts for a report, handout, or presentation for a client, use their color scheme. Consultants, this means the report will look like it came from the client. It will *not* have your firm's look and feel.

In this example, Johanna Morariu and I were designing a slidedoc for the Working Families Success Network. We began by investigating the Working Families Success Network's logo, website, and publications. Their logo has a distinctive blue, orange, and pink and their publications use dark gray text rather than black. Throughout their website they use color blocks with white text and white outlines. Next, we adapted that layout and color scheme for our slidedoc. The images on the right are separate slides (pages) of the report.



You can [locate custom color codes in style guides](#), with a [free eyedropper tool](#), or even with [Microsoft Paint](#). Then, [enter your custom color codes in Microsoft Excel](#) or in [Tableau](#).

## Make Sure Your Colors Are Legible in Grayscale

On-screen reading is getting more common, but chances are, someone will still be printing your visualization. Color printing is expensive, so your

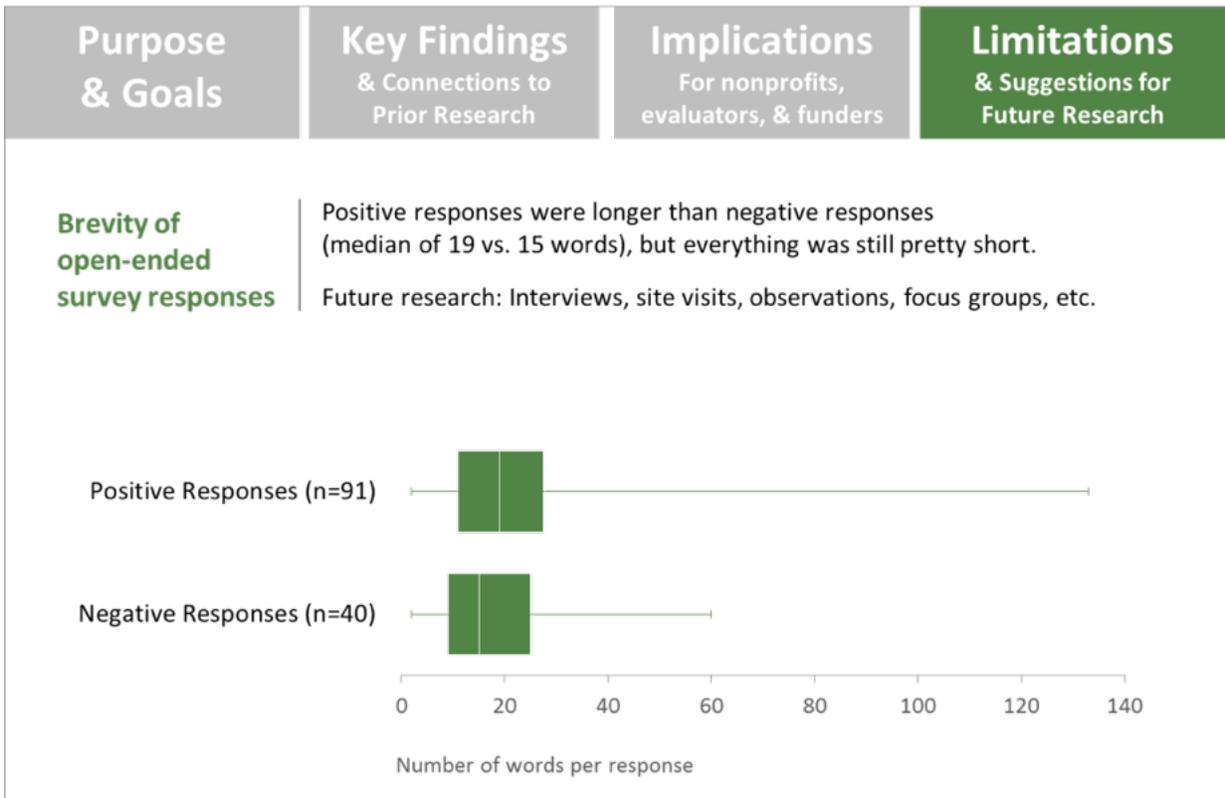
visualization will probably be printed in grayscale instead of in full color. I like to test my drafts ahead of time to make sure they'll still be legible even if they're printed in grayscale. You can test your drafts a couple of different ways. First, you could simply print one draft in full color and another draft in grayscale and then compare them side-by-side. Or, you could simply preview your image file in grayscale so that you don't have to print anything at all. In Microsoft PowerPoint, for example, you simply click on your image file to select it, and then go to the *Picture Tools: Format* tab along the top of your screen. Then, go to the *Color* icon and *Recolor* your image file in grayscale.

## **Make Sure Your Colors Are Legible for People with Color Vision Deficiencies**

Upload your draft to [www.color-blindness.com](http://www.color-blindness.com)'s [Color Vision Deficiency Simulator](#).

## **Emphasize the Takeaway Message with the Action Color**

When you want to tell a story with data, you can guide your viewer's attention to your desired takeaway finding by creating a dark/light contrast. This example comes from one of my graduate school projects a decade ago, so I used the exact shade of green from my university's logo. Then, I used dark green to draw my audience's attention to a couple key parts of the slide. This slide comes from the fourth section or chapter of the presentation, the *Limitations* section, so that tab was highlighted in dark green so that it contrasted with the other tabs, which are in gray. The topic of this particular slide was *Brevity of open-ended survey responses*, so that text is in green so that it stands out against the rest of the text. And the box-and-whisker plot itself also uses dark green.



## Step 6: Clarify Your Message with Text

It's hard to get wording just right, so I usually save my titles, subtitles, and annotations for the end.

### Brand Visuals with Custom Fonts

Rather than using Microsoft's plain ol' Calibri, make sure your visualization's fonts match the project's branding.

### State the Story in the Title

Need to tell a story with data? Rather than using a generic title ("Figure 1" or "Number of youth served"), state the takeaway message in the title.

I first learned about this technique through [Cole Nussbaumer's Storytelling with Data workshop](#) back in 2012—but geez, was it tough to apply! This is one of the hardest practices for social scientists to learn because we're so comfortable with APA formatting and its generic figure titles.

Think Twitter-like and aim for six- to eight-word titles. Look to newspaper articles for inspiration; journalists know how to include the “so what?” in their title. You may or may not read the full newspaper story for additional details. Same thing with charts: your audience may or may not read your full chart, so your title must give them the gist of your findings.

## **Annotate**

*Annotations* are call-out boxes that provide important contextual details. In PowerPoint, Word, or Excel, you can easily create annotations by inserting a text box. No fancy software required!

Here’s a great example from Mother Jones. A generic title would’ve been “Number of children living in poverty” or “Relationship between poverty and geographic location.” This 6-word title, “In Climbing Income Ladder, Location Matters,” ensures that readers grasp the chart’s message instantly. A 2-line caption adds more details underneath the title, and a few cities are annotated. The tweet’s text also reinforces this message.

**Mother Jones**   
@MotherJones · [Follow](#)



This is how likely poor kids are to grow up and move out of poverty based on where they live [bit.ly/1em9VHX](http://bit.ly/1em9VHX)



2:08 PM · Jan 31, 2014

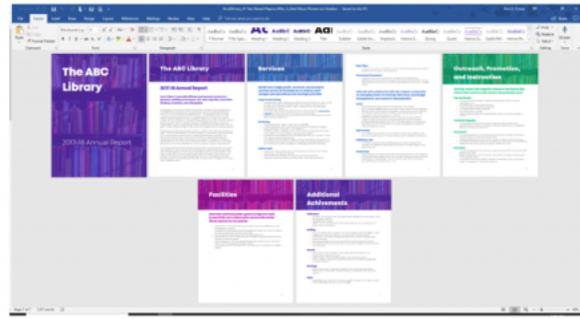
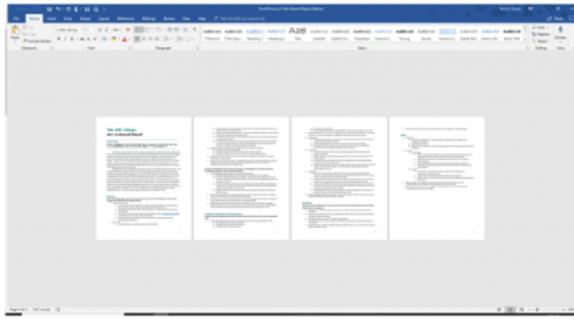


 41  Reply  Share

[Read 10 replies](#)

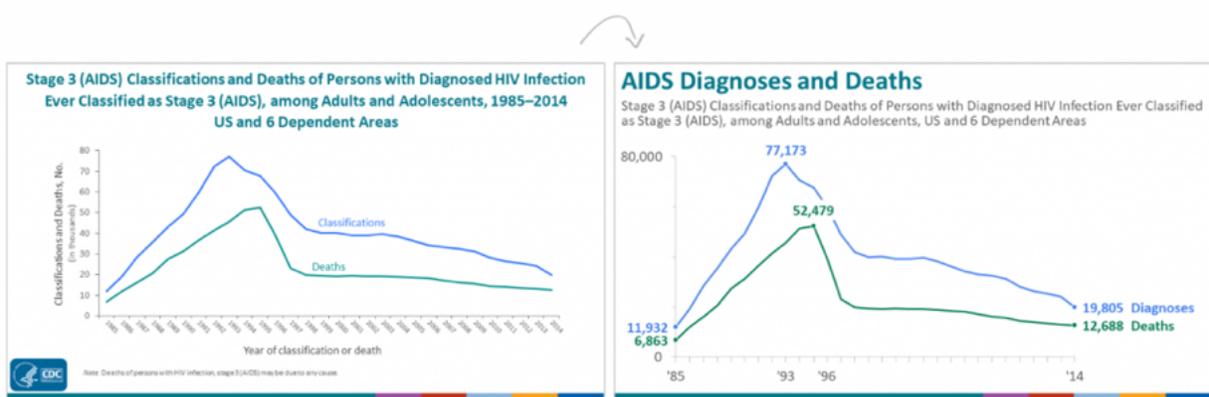
## Establish a Text Hierarchy

Size your fonts according to their importance. A *text hierarchy* tells your viewers which information is most important (headings) and which information is least important (the regular ol' paragraphs). [In this example, I transformed a university's annual report simply by adding an intentional text hierarchy.](#) I call this makeover a *two-hour turnaround* because these are changes that anyone can make in two hours or less. Before, all the font was the same size, so the headings didn't stand out. The report looked like a sea of words. After, we made the headings stand out by with larger fonts and by overlaying the text on top of a photograph. We also used a different color for each section to break up the sea of words into manageable chunks.



## Improve Text Readability

The vast majority of reports, handouts, infographics, dashboards, and slideshows that I review with clients are written at a reading grade level that's so high that reading the documents feels like homework. In this example, we assessed our draft's reading grade level with a free tool called [readable.io](http://readable.io). Then, we re-worded the title so that it was a closer match for our intended audience.



## Step 7: Are You Doing It Right?! Test Your Draft

Woohoo! You're almost finished. Check your progress with these self-assessments.

### The Significant Other Test

aka the Grandmother Test. Give a draft of your chart to a significant other

or coworker. Ask, “What’s the central message in this chart?” If they hesitate more than a few seconds, or if their story doesn’t align with your intended story, try working on your title and caption.

## Use the Data Visualization Checklist

Stephanie Evergreen and I designed the [Data Visualization Checklist](#) in 2014 and updated it in 2016. You can use the checklist to help you assess your drafts.

### Data Visualization Checklist

by Stephanie Evergreen & Ann K. Emery  
May 2016

This checklist is meant to be used as a guide for the development of high impact data visualizations. Rate each aspect of the data visualization by circling the most appropriate number, where 2 points means the guideline was fully met, 1 means it was partially met, and 0 means it was not met at all. n/a should not be used frequently, but reserved for when the guideline truly does not apply. For example, a pie chart has no axes lines or tick marks to rate. If the guidelines has been broken intentionally to make a point, rate it n/a and deduct those points from the total possible. Refer to the Data Visualization Anatomy Chart on the last page for guidance on vocabulary and the Resources at the end for more details.

Text	Guideline	Rating
Graphs don't contain much text, so existing text must encapsulate your message and pack a punch.	<b>6-12 word descriptive title is left-justified in upper left corner</b> Short titles enable readers to comprehend takeaway messages even while quickly skimming the graph. Rather than a generic phrase, use a descriptive sentence that encapsulates the graph's finding or "so what?" Western cultures start reading in the upper left, so locate the title there.	2 1 0 n/a
	<b>Subtitle and/or annotations provide additional information</b> Subtitles and annotations (call-out text within the graph) can add explanatory and interpretive power to a graph. Use them to answer questions a viewer might have or to highlight specific data points.	2 1 0 n/a
	<b>Text size is hierarchical and readable</b> Titles are in a larger size than subtitles or annotations, which are larger than labels, which are larger than axis labels, which are larger than source information. The smallest text - axis labels - are at least 9 point font size on paper, at least 20 on screen.	2 1 0 n/a
	<b>Text is horizontal</b> Titles, subtitles, annotations, and data labels are horizontal (not vertical or diagonal). Line labels and axis labels can deviate from this rule and still receive full points. Consider switching graph orientation (e.g., from column to bar chart) to make text horizontal.	2 1 0 n/a
	<b>Data are labeled directly</b> Position data labels near the data rather than in a separate legend (e.g., on top of or next to bars and next to lines). Eliminate/embed legends when possible because eye movement back and forth between the legend and the data can interrupt the brain's attempts to interpret the graph.	2 1 0 n/a
	<b>Labels are used sparingly</b> Focus attention by removing the redundancy. For example, in line charts, label every other year on an axis. Do not add numeric labels *and* use a y-axis scale, since this is redundant.	2 1 0 n/a

## Step 8: Share Your Completed Data Visualization

The final step in my Data Visualization Design Process is to adapt your visualization to fit different dissemination formats, like presentations, webinars, handouts, and social media.

## Tips for Sharing Data Visualizations in Presentations

During conference presentations, presentations at staff meetings, or webinars, try breaking up your chart into several slides. Think storyboarding or animation. This takes a while to learn, but is well worth the learning curve.

Here's a storyboarding example where I share key statistics about the American Evaluation Association's Data Visualization and Reporting Topical Interest Group:



## Tips for Sharing Data Visualizations in Webinars

I regularly share results from research studies during webinars. Webinars are a unique setting and require a unique skill set. One of the things that makes webinars unique is that you'll want to pay careful attention to your physical set-up. Here's [what my desk looks like when I give webinars](#):

## Laptop #1

View slides and talking points  
Not registered for webinar

## Laptop #2

Runs live webinar in Presenter role  
Blue internet cord for fast connection

## Laptop #3

Participates in webinar in Participant role  
(to judge lag time between slides)



**Smart phone** as backup  
**Water**, half full  
**Chapstick**

**Landline phone**

**Notepad**  
for communicating  
with co-presenter

**Printed slides**  
just in case

**Tea**, decaf  
**Chapstick**

## Tips for Sharing Data Visualizations in One-Page Handouts

We often print our full slideset for our audience. However, these “slideuments,” as Nancy Duarte calls them, are pretty much worthless. Our audience gets lost in pages and pages of details. One strategy is to produce a separate one-page handout with your most important chart. Now, the audience will walk away from your presentation with a crystal clear picture of the key message you wanted them to hear.

## **Tips for Sharing Data Visualizations on Social Media**

Planning to tweet a chart or two? Twitter images have a 2:1 aspect ratio. This means that when you're scrolling through your Twitter feed, the images automatically display about twice as wide as they are tall. Make sure you adjust your charts to fit a 2:1 aspect ratio; otherwise your carefully crafted title will get cut off. Check out [the Ultimate Guide to Social Media Image Dimensions](#) for more tips on sizing charts for each channel.

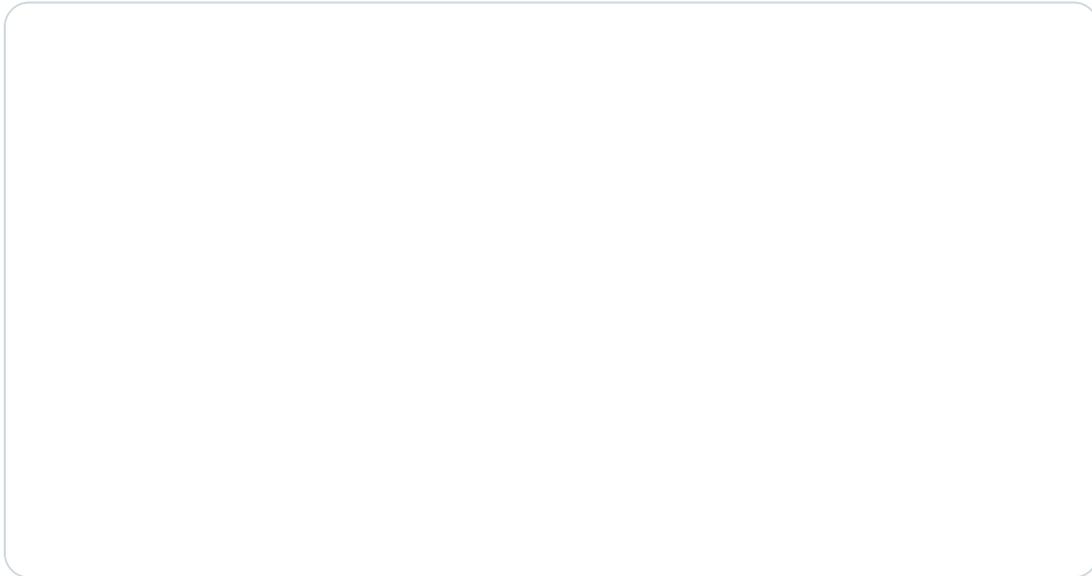
Another consideration is that a chart might be completely wrong for your Twitter followers altogether. An alternative is to overlap findings on photographs, which adds valuable context for the audience.

Pew Research Internet 

@pewinternet · [Follow](#)



Do you text your spouse/partner when you're both home but in different rooms? You're not alone [pewrsr.ch/1fdlj4t](http://pewrsr.ch/1fdlj4t)



1:21 PM · Feb 11, 2014



7



Reply



Share

[Read 4 replies](#)

## Tips for Sharing Data Visualizations in Dashboards

Now that you can create a single chart, combine several charts to create a dashboard or infographic. Sometimes people use *dashboard* and *infographic* interchangeably, but these visual modes are quite different.

Dashboards are for internal audiences (for example, to help directors make decisions about a program's future). Dashboards provide key metrics about a program, department, or organization, usually at regular intervals over time (e.g., quarterly reports to your Board of Directors).

## FY17 Foster Parent Survey

We survey our foster care parents every year. This year, 24 foster parents responded.

### Scale

5 = Completely satisfied

4 = Very satisfied

3 = Satisfied

2 = Not very satisfied

1 = Not at all satisfied

Topic	Survey Question	FY16	FY17	Difference
<b>Staff</b>	Staff are courteous and respectful.	3.5	4.5	+1
	Staff are sensitive to social, economic, and cultural backgrounds.	3.5	4.4	+0.9
	Staff return calls within 2 business days.	3.5	4.4	+0.9
	Staff show concern.	3.4	4.1	+0.7
	Staff are knowledgeable about foster care.	3.4	4.0	+0.6
	Staff respond to questions and requests within 1 week.	3.4	4.0	+0.6
<b>Clients</b>	Clients are satisfied with progress being made.	3.5	3.9	+0.4
<b>Caseworkers</b>	Other staff are available to help me if my caseworker is not.	3.7	4.4	+0.7
	The caseworker encouraged me to participate in ACR, staffings, and court hearings.	3.4	4.0	+0.6
	The caseworker sought information from me regarding case planning and the child's future.	3.4	4.0	+0.6
	The caseworker visited with caregiver in the home as required.	3.1	3.7	+0.6
	The caseworker provides information needed to care for child placed.	3.5	4.0	+0.5
	The caseworker assisted me in getting services for the child promptly.	3.4	3.9	+0.5
	The caseworker involved children placed who were over age 7 in service planning.	3.6	3.4	-0.2
<b>The ABC Organization</b>	I feel like a member of the team with ABC staff.	3.3	4.0	+0.7
	The ABC Organization provided sufficient training to address the needs of the child.	3.1	3.7	+0.6
<b>Licensing Worker</b>	The licensing worker was supportive, knowledgeable, and helpful.	3.4	4.3	+0.9
	The licensing worker provided at least 2 in-home visits per year.	3.7	4.6	+0.9
	The licensing worker was available to assist me with any licensing issues that came up.	3.5	4.2	+0.7
<b>Overall</b>	Resources and services are available to help me if there is a crisis in my home.	3.3	4.1	+0.8
	Overall, I'm satisfied as an ABC Organization foster parent.	3.4	4.1	+0.7
	I would recommend others to become ABC Organization foster parents.	3.4	3.8	+0.4

## Tips for Sharing Data Visualizations in Infographics

Infographics are for external audiences (for example, to increase awareness about your issue). They're usually designed for large masses of the general public—not just a handful of key decision makers, like dashboards—so they include plenty of explanatory text. Charts are often grouped together so that you can “read” the story from top to bottom.

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## Learn More

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## More about [Ann K. Emery](#)

Ann K. Emery is a sought-after speaker who is determined to get your data out of spreadsheets and into stakeholders' hands. Each year, she leads more than 100 workshops, webinars, and keynotes for thousands of people around the globe. Her design consultancy also overhauls graphs, publications, and slideshows with the goal of making technical information easier to understand for non-technical audiences.

## 31 Comments

-  [Susan Kistler](#) says:

May 1, 2014 at 12:55 pm

This is fantastic Ann, thanks so so much for sharing. This is one of the clearest process pieces I've seen regarding dataviz design. I use a list when teaching that parallels this, but with less detail and less gorgeous graphics. The only addition I can think of is to encourage a step on checking for logical ordering of response categories when needed (alpha, %, geographic, category, etc.).

I appreciate your being so wonderfully giving with your knowledge and expertise.

[Reply](#)

-  [Ann K. Emery](#) says:

May 6, 2014 at 11:49 am

Thank you Susan! I agree, the logical ordering is crucial—it's one of the easiest edits to make, and can really help audience comprehension. This post is more big-picture/critical thinking/discussion questions/process. Stay tuned for next week's post, a collaboration from Stephanie Evergreen and I, that gets at the details. Taken together,

hopefully the posts will serve as a strong guide for researchers and evaluators. To be continued!

[Reply](#)

-  *Sharon Wasco* says:

**May 1, 2014 at 5:41 pm**

...ditto to what Susan said!

Thank you, Ann, so much for sharing this. From time to time I consider a blog and find myself wondering — why would I do that. Then I see this. Not only is it a treasure trove for evaluators and their clients, but you have done almost all the work for a training/presentation. It makes me think if I pick blog topics right AND make them highly visual like you did here, then I can prepare material that can go directly into a slidedeck for various talks with clients.... Previously, I have known blogs to just be story-telling, advice-sharing, narrative-constructing texts. This is inspiring! So, thanks again.

[Reply](#)

-  *Ann K. Emery* says:

**May 6, 2014 at 11:50 am**

Sharon, thank you! I hope you feel inspired to begin or continue blogging. And you're right, similar material (especially visual content) can be presented in a number of formats—conference presentations, blog posts, white papers, client meetings, etc. There's no reason to limit your ideas to a single communications mode.

[Reply](#)

-  *Amy Germuth* says:

**May 5, 2014 at 5:27 pm**

Wow! This is great – it really demystifies the data visualization design process so anyone can at least try it. Thanks for all of your insight!

Amy

## Reply

-  [Ann K. Emery](#) says:

**June 14, 2014 at 10:03 am**

Thanks Amy! Keep me posted on how that sankey diagram turns out for you.

## Reply

- [Teaching data visualization: Recommended readings and resources](#) says:

**May 6, 2014 at 10:56 pm**

[...] The Dataviz Design Process: 7 Steps for Beginners: Steps 2, 3, 4, 5 in this post discuss various issues in the design of a visualization, e.g., reduce clutter, use color to emphasize key findings, write takeaway message in the title, etc. [...]

## Reply

-  [Nicole Clark, LMSW](#) says:

**May 7, 2014 at 5:00 pm**

I just bookmarked this post! This should be in every evaluator's toolbox. My strength in evaluation is definitely not in making my data more visually appealing and to-the-point to my target audience, so this helps TONS! Thank you so much, Ann!

## Reply

-  [Ann K. Emery](#) says:

**June 2, 2014 at 7:27 am**

Thanks Nicole! Please keep me posted as you revise your charts. I'd love to see your remakes.

## Reply

- [Data Viz News \[54\] | Visual Loop](#) says:

**May 10, 2014 at 2:19 pm**

[...] The Dataviz Design Process: 7 Steps for Beginners | Ann K.

Emery [...]

[Reply](#)

-  *R.s. Amarae II* says:

**May 18, 2014 at 2:51 am**

Highly insightful post. I actually have done things like adding white borders, adapting to client color schemes, etc.... and this just further validates those practices. Definitely something that will serve as a “primer” for years to come.

[Reply](#)

- *Ann K. Emery* says:

**June 2, 2014 at 7:28 am**

R.S., thanks! Are any examples from your work posted online? I'd be interested in seeing examples of how you've used white borders and client color schemes in your work.

[Reply](#)

- *Sindy Sacoman* says:

**June 9, 2014 at 11:45 am**

I love your posts! I've bookmarked this post. I work with tribal communities so dataviz is so important. I try to be creative and meet the needs of the client and will definitely put these steps into practice. Thank you so much for sharing in detail and providing examples.

[Reply](#)

- *Ann K. Emery* says:

**June 14, 2014 at 10:05 am**

Sindy, thanks! I checked out your work and it looks great. Are you attending Eval14 in Denver this fall? Let's grab coffee or something.

[Reply](#)

- *cathy cirina-chiu* says:

**June 10, 2014 at 1:24 pm**

thanks ann! just love your posts!!

Reply

- *Ann K. Emery* says:

**June 14, 2014 at 10:05 am**

Thanks so much Cathy.

Reply

- *Ann K. Emery* says:

**July 14, 2014 at 4:15 pm**

Many thanks to Caleb Worm for publishing a guide about sizing images for each social media outlet. As of July 2014, Twitter displays images as 880 x 440, so a 2:1 ratio. That means your charts need to be twice as wide as they are tall for them to show fully (aka not cut off your title on the top or anything important on the bottom) in your followers' feeds. Here's Caleb's full article: <http://mediumblast.com/social-media/social-media-image-dimensions-sizing-guide-cheat-sheet/>

Reply

- *The Dataviz Design Process: 7 Steps for Beginners | Learning Lovers* says:

**October 6, 2014 at 12:30 pm**

[...] <http://annkemery.com/> [...]

Reply

- *Ann's Blog | The best thing I've ever written about, and At-a-Glance Patterns with Area Charts* says:

**October 19, 2014 at 11:12 pm**

[...] Version H1: Isn't it incredible what a little tweaking can do? First, I went through my Data Visualization Design Process article and made sure I covered all the big-picture

aspects of the chart. Then, I went through [...]

Reply

- [Data visualisation = data analysis + graphic design | Evaluation Capacity Development](#) says:

**November 5, 2014 at 3:50 am**

[...] here to read more about each step and begin editing your own charts. You can use this Data Visualisation [...]

Reply

- [Data Viz News \[54\] | Visualoop](#) says:

**January 19, 2015 at 6:55 am**

[...] The Dataviz Design Process: 7 Steps for Beginners | Ann K. Emery [...]

Reply

- [50 great data viz articles of 2014 | Visualoop](#) says:

**January 30, 2015 at 1:05 pm**

[...] The Dataviz Design Process: 7 Steps for Beginners | Ann K. Emery [...]

Reply

- [LARIA Y&H – Feb 2015 event summary](#) says:

**February 5, 2015 at 5:56 am**

[...] The data viz design process – 7 steps for beginners [...]

Reply

- [Workshop: Information Visualisation, CHASE Arts and Humanities in the Digital Age – mia ridge](#) says:

**June 24, 2015 at 6:22 pm**

[...] <http://annkemery.com/dataviz-design-process/> [...]

Reply

- [Dataviz : des graphiques pour les nuls | Une question de référencement](#) says:

**November 17, 2016 at 7:27 pm**

[...] Source : <http://annkemery.com/dataviz-design-process/> [...]

Reply

- *Faisal khan* says:

**September 24, 2019 at 4:49 am**

Amazing all tools of [data visualization](#) explained very nicely.

Reply

- *Mostafa Sharaf* says:

**August 9, 2020 at 8:45 pm**

this is one of the best articles i read for beginners about data visualization and analysis

Thank you

Reply

- *Mahesh Manish* says:

**November 4, 2020 at 5:59 am**

Thank you for sharing this post.

Reply

- *Enabling Systems* says:

**April 10, 2021 at 9:50 am**

Data Visualization plays very important role in the technology field.

Reply

- *Caba Innovatives | Graphic design courses in delhi* says:

**May 12, 2022 at 7:46 am**

It is a nice post to keep sharing valuable information like this.

Reply

- *Nancy Data* says:

**June 17, 2022 at 1:30 pm**

Thanks for sharing! This website is very informative. I appreciate this website. What are steps in the data visualization process?

[Reply](#)

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