

Advocate for your Library with Effective Data Storytelling

ADVOCATE FOR YOUR LIBRARY WITH EFFECTIVE DATA STORYTELLING

PALS



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INTRODUCTION

This book is the result of work that was done in July 2023 for the second data workshop sponsored by the PALS Department at Minnesota State. The workshop was designed in response to feedback from the participants in our first workshop [Data Literacy Intensive for Librarians](#). They made it clear that while they felt more confident in their data skills, they were missing the “magic” required for telling a good story using that data. And that makes sense. Of course, it is not magic even if it feels that way. It is a different skill set to develop. Working with data requires us to slow down, look at the data in multiple ways, map out what it is telling us, and then produce a compelling narrative that speaks to our multitude of audiences. It is hard work that is necessary if we are to help people understand the library’s place and value in the parent organization. None of us are paid spokespeople for author Brent Dykes, but the leaders and participants in this workshop all agree that his book, *Effective Data Storytelling: How to Drive Change with Data, Narrative and Visuals*, served as an effective backbone to develop these new skills and will serve as a reference for future projects.

As with our previous book, you will find perspectives from librarians at a variety of library types, content that helped them work through new concepts, and presentations of their data work. If you have not been able to identify a starting point for your own data visualizations and storytelling, I hope that this helps get you there.

A handwritten signature in black ink, appearing to read "Johanna Smith". The signature is fluid and cursive, with a large initial "J" and "S".

Johnna S. Horton
Executive Director of PALS

CHAPTER 1.

PREPARATION

While we had a good response to the data intensive mini-course last year, participants still seemed to want more as far as data visualization and advocacy. In January 2023, Jill came across the book *Effective Data Storytelling: How to Drive Change with Data, Narrative and Visuals*. This is what our people need! Let's do something similar to last year, but with this book! Johnna agreed.

The plan came together quickly and the first email announcement went out February 17, 2023. Applications were due on February 28th. We had eight applicants and accepted them all, with seven finishing. We had:

- 4 from last year, one from a 4-year institution and three from 2-year institutions
- 1 new person from a 2-year institution
- 1 new person from a state agency
- 1 new person from a private college

Acceptance emails went out March 22nd, with a reminder about participant expectations:

- Read the book and complete the associated assignments before the workshop starts
- Participate in all 4 sessions with camera on
- Do your homework during July (about 2 hours/week)
- Support each other
- Produce and present your final project, gathering

feedback along the way

We bought the books in April to arrive in May so that people had plenty of time to read them. Some participants had access to the electronic version at their libraries, but most chose to use the print version.

The plan was again to have four live sessions via Zoom on Thursdays in July with the expectation of 2 hours per week for homework.

We kept the principles in mind from Universal Design for Learning and Culturally Responsive Teaching as we designed this mini-course. We had a module in D2L for each week plus a Start Here and a Wrap Up module.

Due to union contracts and funding, we couldn't require some of the participants to do any prep work before July 1, but we wanted them to be prepared for our July 6th session. To add another complication, July 4th is a long holiday weekend for many people. We opened up D2L Brightspace early on June 7th and gave the participants warning about the tight timing. Some participants did voluntarily prepare in June. The ones who didn't felt behind.

We used the same grading scheme as last year. Participants needed to meet 80% of the requirements to successfully complete the course. We did not use letter grades, but rather this scheme:

- Complete
- Resubmit
- Not Yet Complete

There were initially 12 activities to complete, but we did make some adjustments due to participants' feelings of overwhelm.

Tools We Used:

- D2L Brightspace – this was the home for the course
- Zoom – we met live via Zoom web conferencing

- Mediaspace – we created some videos and stored them in Kaltura’s Mediaspace
- Quizizz – we used this for a final review quiz game

We had difficulty with permissions for Office 365 Whiteboard for our students outside of Minnesota State, so we changed to simple Microsoft Word documents for the reflection activity concluding each live session. Students reflected on:

- Key Points
- Favorite Thing I Learned Today
- Questions I Still Have

All of the applications, other than Quizizz, are enterprise-level and Minnesota State-supported. This allowed for some ease of use due to prior knowledge for Minnesota State participants and also caused some anxiety for our participants who had not used these tools before.

CHAPTER 2.

LIVE SESSIONS

The focus of our sessions was discussion and practical exercises rather than lectures. We asked participants to come prepared to explore, debate, and experiment.

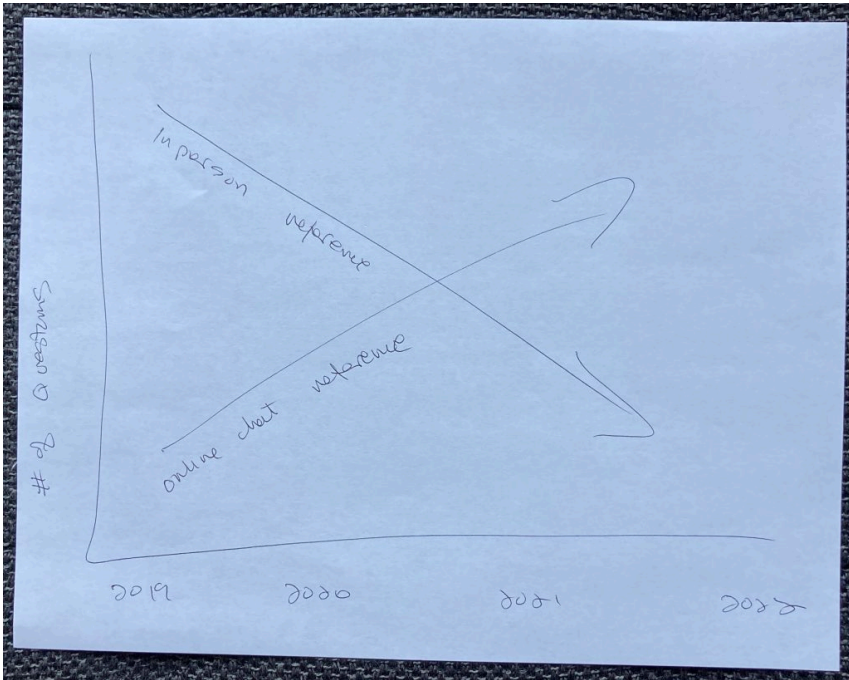
DURING OUR JULY 6 SESSION

Key activities were:

1 – Discuss chapters 1-6. One participant had an interesting question about what stories we want to tell versus what our stakeholders want to hear.

2 – Follow up on the discussions already begun in D2L Brightspace and help each other decide on topics and best visualizations. Jill outlined her process:

- Explore data (sort columns up and down, try different charts with different fields)
- Note: Software rarely does something good on its own
- Draw what she thinks would be a good representation of what is happening, for example:



Example of hand-drawn chart with in person reference going down and chat reference going up over time

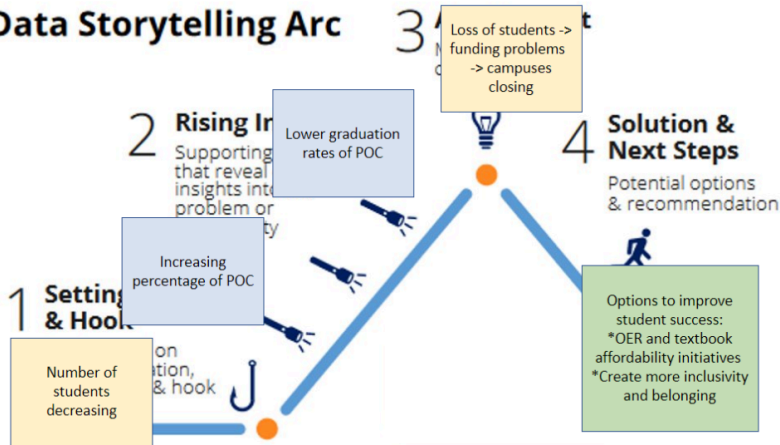
- Figure out how to make the software do something reasonable
 - Different tools have strengths and weaknesses depending on your goal (Alma Analytics, Excel, Power BI, PowerPoint, Canva, etc.)

Tips for everyone:

- Make it focused and simple
- Label everything really well

3 – Begin storyboarding our presentations, similar to Figure 6.12 from page 179 in the book. For example:

Data Storytelling Arc



Example storyboard discussed in class

In this example, Jill shared the data story she was working on:

- Setting & Hook – Number of students decreasing
- Rising Insight – Increasing percentage of people of color (POC)
- Rising Insight – Lower graduation rate of POC
- Aha Insight – Loss of students could lead to funding problems, which could lead to campuses closing
- Next Steps – Options to improve student success:
 - OER and textbook affordability initiatives
 - Create more inclusivity and belonging

We like to end each session with a reflection activity where participants share their favorite learning and record key points. Here is what they said for our July 6 session:

Key Points

- People don't remember and frequently don't care about facts.

- Just pick a topic
- Psychology of communicating data, types of data visualizations
- Data visualization and storytelling are both extremely simple and layered /complex.
- Some of the intangibles DO actually have numbers to tell the story.
- Keep it small!
- Keeping topic small, looking at different types of visualizations that may go better with my data
- Group can help unfuddle the stories that are good to tell.

Favorite Thing I Learned Today

- Focus on individual people, rather than minute changes in percentages.
- Keep it simple
- I learned a lot about ways to think about gathering data, even if my institution doesn't have it
- The storyboard exercise helped me see aspects of my story that were invisible to me before.
- I learned about panel line charts and I also enjoyed giving/receiving feedback and how we can all relate to each other, despite the topic/data being different.
- Storyboarding is helpful!
- Storyboarding helped me flesh out my topic.
- Keep it simple! Reducing link errors is enough without having to refer to user groups.

Questions I Still Have

- Deciding which data points to include will be the difficult

part. How to do this?

- Not sure. I might throw out my topic altogether!
- I am not as sure about my storyboard, please give feedback once I post it!
- I feel a little like I'm in the data visualization deep end and hoping I don't drown. But in all seriousness, this is how I always feel when I'm learning something new 😊
- How can I represent the visuals and tie them together? I'm going to try the panel graph!
- I am still going to be anxious about the tech I use to put this together—so I suppose that's my biggest question/ thought right now.
- Not sure right now, but I'm sure I'll think of questions as I work on my assignments for next week.
- Storyboarding "hooks" in context of my topic. Overall approach to storyboarding.

DURING OUR JULY 13 SESSION

Key activities were:

- 1 – Discuss chapters 7-9.
- 2 – Follow up on the discussions already begun on our visual aids (slides for most people).
- 3 – Discuss incorporating DEI into our projects if possible. Jill used her visual aid for her changing demographics story to kick things off: <https://a-pals.vev.site/changing-demographics>

There will be retrenchments (position eliminations) and mergers. How do we position the library in this environment?

Key Points

- Less is more.
- Comparing current data to pre-Covid data is not fair.
- Group think is helpful
- I'm a collaborator and need sounding boards to help me work through- I'm really grateful for the group think and the feedback and encouragement
- Show your data but eliminate what doesn't contribute to your story.
- Great to have feedback from the group

Favorite Thing I Learned Today

- Ways to adjust unintended misinformation in my data visuals.
- Enjoyed going through everyone's projects thus far
- Keep it simple
- Second Karen's: stop thinking about the past (at least as a comparison point or with rose colored glasses) & instead reflect on who/what we are NOW and who/what we want to be moving forward
- Don't need to continue comparing pre-COVID to now. we are in different times. What did we learn/take from that and how are we moving forward.
- Pre-COVID and COVID are apples and oranges

Questions I Still Have

- How do we adjust to COVID
- How can I add an emotional impact piece? Does that become a larger part of my elevator speech?

- None at the moment. I am sure I will have some once I start polishing my slides.
- Can't think of a specific question, but feeling the discomfort of being a learner and not having things figured out (yet)
- None yet- but I sure do appreciate everyone's feedback!!
- None at the moment

DURING OUR JULY 20 SESSION

Key activities were:

1 – Discuss the polish ideas from the book so we can make our projects as good as possible. (The last four of the Seven Essential Principles, which start on page 231.) We applied these ideas by critiquing some charts in published articles.

2 – Breakout rooms – Choose something you would change/improve in your partner's charts and/or slides. We also spent some time workshoping slides as a group.

3 – Create a data trailer for your partner. Reminder about data trailers, mentioned in the book in two places:

Page 181-2:

- Data trailer to pique interest (Setting, Hook, and Aha)
- Invitation to rest of data story
- Hopefully they say "tell me more"
- Then you go into the rising insights

Page 292-3:

- A short email instead of whole data story
- Still Setting, Hook and Aha
- Maybe also proposed solution to drive a decision or

action

Example for Jill's changing demographics story:

Dear Admin,

We have been reading about the changing demographics in education:

- Fewer students overall due to declining birth rates
- Higher percentage of POC students
- Lower graduation rates of POC students

We understand that loss of students would create funding problems, which could cause campus closures.

We want to help improve retention and student success.

We see that OER and textbook affordability initiatives have been successful on other campuses. Can we find \$5000 in the budget to start a pilot project on this?

Thank you,
The Library

Key Points

- Some data doesn't need visuals.
- Simplify, simplify, simplify – know all the background data to field questions
- Simple is better, even if it goes against our librarian instincts ;P
- Don't visualize something unless it has impact/purpose.
- Cut some text and stick to less words on the page! Save it for the narrative!
- Keep in mind the legibility of the visuals; WE CAN DO

IT

- Leave out slides if they're "too extra"

Favorite Thing I Learned Today

- It's easier to do data trailers for someone else than for yourself (which I think is a forest from the trees self-editing barrier which is harder to do looking at your own work).
- I like working from templates and doing trailers for others 😊
- Data trailers can be a good way to make sure your story makes sense.
- Also, just because something is published, doesn't mean it is great. We shouldn't let our insecurities prevent us from trying to get published.
- I *really* appreciated and enjoyed the activities where we looked at some presentations together, reviewed sample charts from published articles and wrote data trailers for each other. Great class!
- Make them ask/wonder for more! (Hopefully you get their interest and attention enough to get to the next step)
- Separate out the key aha moment in the narrative flow—gives it more emphasis
- Trailers are easier than you think

Questions I Still Have

- No Questions
- No questions. Just feeling a lot of feels (I almost started crying today) because I find this work (focusing & visualizing data) really difficult, but also really rewarding/interested/important! I am grateful to be here

and for all of you.

- Still working out the visuals for the “story” I already have! I am trying to avoid the idea of creating visuals just for the sake of visuals (i.e. the articles we critiqued).
- I think I’m still going to be a little confusing in my narrative; I think that’ll get better when I practice my video!
- No questions today.

DURING OUR JULY 27 SESSION

Key activities were:

- 1 – Watch videos and have Q & A on them.
- 2 – Quiz game to review key concepts.
- 3 – Discuss and wrap up this mini-course. A brief review:

What Have We Done?

The Book: Effective Data Storytelling

- We read and discussed
- We tried creating storyboards
- We practiced the polish ideas with published articles
- We tried creating data trailers

The Project

- Brainstormed topics/opportunities
- Shared possible visualizations
- We incorporated diversity, equity, and inclusion principles
- We created slides, keeping accessibility in mind
- We created videos

We had some great discussions!

We practiced talking about library data

Key Points

- Be concise and focus.
- Done is better than not done. It's ok to have a living project that continuously grows and changes.
- Seeing the projects come together was so cool!
- Simple is possible and effective. Don't overthink. Be as kind toward myself as I am toward others. <3
- Agreed: Keep it simple!
- I learned some new PowerPoint tricks during this process. The key points that I took away were that I value the feedback. I liked hearing/re-hearing that done is better than complete- thanks to Alyssa for reminding me of that! I was so overwhelmed last night and I did feel some relief once I submitted. It's not great, but it's done. So I appreciate everyone's grace and commentary today.
- We have all grown a TON throughout this past month in our data-storytelling prowess
- Watching all the videos was so cool! We worked together on all of these concepts and seeing the finished products was amazing.

Favorite Thing I Learned Today

- I learned something from everyone who presented.
- Everyone cares about their libraries – so much!
- My recording isn't as abhorrent as I think it is
- Everyone has great ideas and have inspired me in a variety of ways! Thank you for being in this class with me. 😊

- I'm grateful to Johnna and Jill for this opportunity. 😊
- Learned over the week- I like data trailers!! =)
- I learned today that feedback is super helpful when you're too immersed and too close to your project – step away and have fresh eyes look/listen!
- I loved the critiques of my video—they helped clarify, and I'm looking forward to making the revisions
- The critiques of my video were so helpful. I edited and edited, but I was too close to it and couldn't see ways to make it better.

Questions I Still Have

- How to use what I created in a practical context.
- How to focus all this data to a high impact thesis
- I don't know how to add captions, so I might reach out for help!
- Feel a little overwhelmed by data gathering possibilities.
- I am looking forward to processing all the “data” in my brain that is making it spin. It's a good thing! I have so many ideas to go forward on – or at least discuss with my colleagues.
- I'm wondering the right places/spaces to bring this presentation forward to my campus!
- I have ideas of next steps, especially aimed toward faculty and administration, but how can I make the biggest impact. Maybe by visiting department meetings and sharing it “synchronously” (: with faculty.

A few final thoughts from the presenters:

- The participants really struggled with keeping their

projects small and focused.

- It really can't be overstated that narrowing focus is so difficult
- Working together helps!
 - Discussing and giving each other feedback
 - Having them work on each other's data trailers

CHAPTER 3.

ADDITIONAL RESOURCES

While we mostly relied on the book *Effective Data Storytelling: How to Drive Change with Data, Narrative and Visual*, we did share the following additional resources.

ARTICLES ABOUT THE CHANGING DEMOGRAPHICS COMING IN HIGHER ED

- [Changing Demographics and Digital Transformation](#)
- [Look at the Numbers](#)
- [A Second Demographic Cliff Adds to Urgency for Change](#)
- [New Economy and Changing Demographics that Will Impact Professional, Continuing and Online Education](#)
- [Changing Demographics](#)
- [Changing Student Demographics: Rising Number of Professional Students](#)

Possible questions to ponder:

- What DEI goals does your institution have?
- Who are the underserved students at your institution?
- Do you already have an equity element in your project? If not, can you add it? And if you cannot add it now, what can you do soon on that?
- How can the library help close equity gaps?

- What have you already done to improve equity in your library?
- What will you do next? If resources were not an issue, what would you really want to do to improve equity in your library?

P.S. Another interesting resource you might want to circle back to later: *The Agile College: How Institutions Successfully Navigate Demographic Changes* by Nathan D. Grawe (local author! at Carleton College in Northfield, MN). While libraries are not mentioned in the book specifically, there are some topics the author discusses where libraries can help:

- Retention and student success will be important
- Making connections to vulnerable students
- Creating a sense of belonging
- Student worker experience

Lastly, prospects for the Midwest are not great. There will be eliminated positions and mergers. How do we position the library in this environment?

SCROLLYTELLING AND FANCY TOOLS

We have all seen those really cool stories with images and animations that reveal themselves as we scroll down.

At first these stories took a lot of effort from web developers, but newer tools are making cool effects easier to do. Here are some resources about the possibilities and the tools:

- [From Storytelling To Scrollytelling: A Short Introduction and Beyond*](#)
- [The Scrollytelling Tools Behind Great Narrative Content](#) (you can use Vev for free if you are OK with their watermark)

- [15 visual storytelling tools for content teams](#) (only 3 free stories with them)
- [Best Storytelling tools](#)

P.S. from Jill

I think scrollytelling can really help increase engagement, so I wanted to try Vev. (Microsoft Sway and Adobe Express didn't offer enough features.)

I really like it! There is a bit of a learning curve, but you have a lot of options and control of every little thing.

[Check out my first attempt](#) – it is not up to NYT standards, so consider it proof of concept.

No pressure for you to use Vev – I just want you to know this is within your reach! Check out this tutorial if you are interested – [How to Build an Annual Report in Vev](#).

STORYTELLING AT MINITEX CONNECT

Laura Packer's session on storytelling at Minitex Connect on May 3, 2023 was interesting. She has a very compelling speaking style. Her main message was: You already know how to do this!

What do you think about that?

She [provided slides plus documents on organizational storytelling here](#) and [the recording is here](#).

DATA VISUALIZATION COURSE ON LINKEDIN LEARNING

Another optional resource for you if you have access to LinkedIn Learning is [Data Visualization: Storytelling](#) By Bill Shander. It is only 1.5 hours and has some nice review of story structure and mechanisms.

ACCESSIBILITY

Creating Accessible documents:

- <https://www.section508.gov/create/documents/>
- <https://www.washington.edu/accessibility/documents/>

Creating Accessible videos:

- <https://www.washington.edu/accessibility/videos/>
- <https://www.w3.org/WAI/media/av/>
- <https://www.section508.gov/create/video-social/>

CHAPTER 4.

RESULTS

The content seemed mostly appropriate to the skill levels and interests of the participants. Most people really liked the book *Effective Data Storytelling: How to Drive Change with Data, Narrative and Visuals*. Some people felt overwhelmed reading a whole book, even though that was the plan when they applied.

The format worked for the most part. People were engaged during our live sessions on Zoom and especially appreciated getting feedback on their projects. Overall, using D2L Brightspace to house the course worked, though it was awkward for our participants who had not already used it.

The big theme that emerged was that it was difficult for participants to keep things small and doable, especially for their projects, but even when it came to reading the book. (Yes, it is OK to skim the text if needed!)

The group was active and interested in each other's perspectives and participants brought varied experience and knowledge. Two instructors and 7 participants was a nice size for the group.

PARTICIPANTS AND THEIR FINAL PROJECTS

- Anoka Technical College (Deanna Munson) – https://mediaspace.minnstate.edu/media/Deanna/1_5n4atf5l
- Bethany Lutheran College (Alyssa Inniger) – <https://www.youtube.com/watch?v=ahOnN9M9zUk>
- Century College (Shana Crandall) –

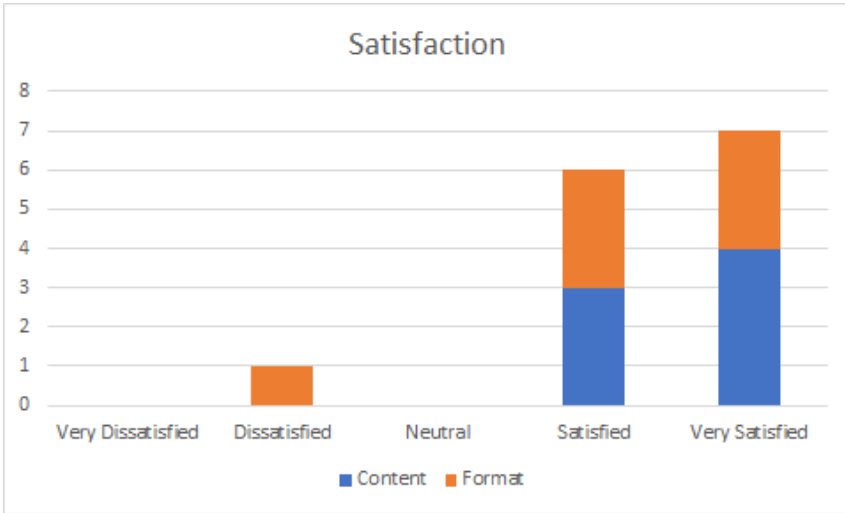
https://mediaspace.minnstate.edu/media/2023%20Library%20Instruction%3A%20Closing%20the%20Gaps%20in%20Student%20Success%20-%20Shana%20Crandall%20/1_ukg8k9i1

- Hennepin Technical College (Adam Bezdicek) – https://mediaspace.minnstate.edu/media/t/1_erbtrhj
- Minnesota Department of Transportation (Karen Neinstadt) – https://mnscu.sharepoint.com/:p/s/MNSU-PALS-Dev/EZZUIdzdCdtKq3Je7NOVlzIBTcqHCvs5xvVsSjnX_IpL_Q?e=FfC8WA
- Southwest Minnesota State University (Maria Kingsbury) – https://mediaspace.minnstate.edu/media/Data+Storytelling+Final/1_juwectzn

FINAL SURVEY RESULTS

Satisfaction with Effective Data Storytelling was high:

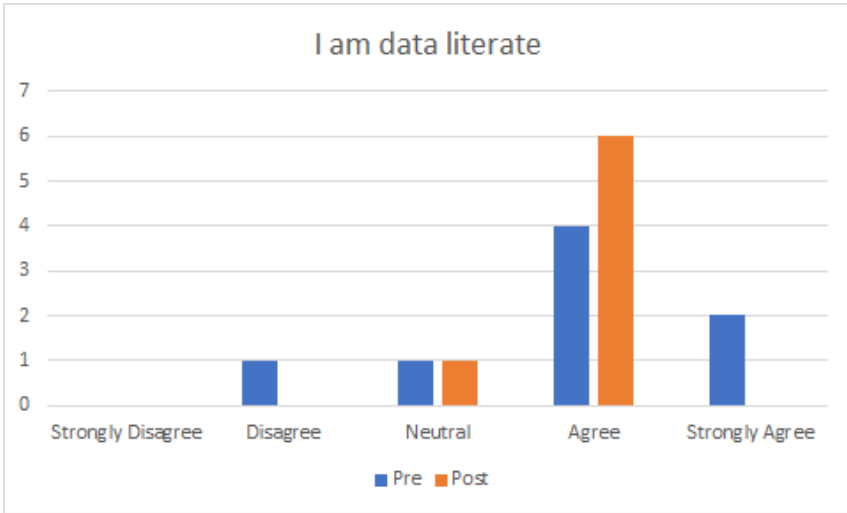
- 57% were very satisfied with the content
- 43% were very satisfied with the format



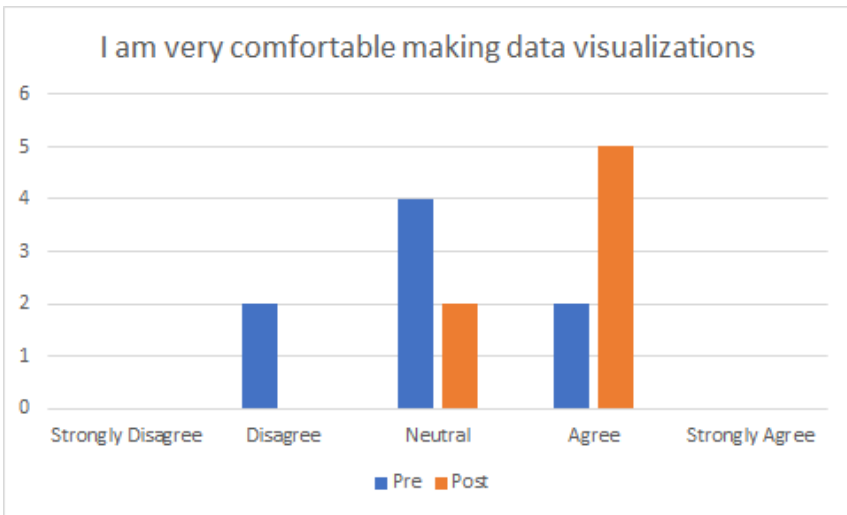
Other than the 1 person dissatisfied with the format, all were satisfied or very satisfied for both content and format

Most importantly, they all agreed that they felt better equipped to act and move forward with their data storytelling.

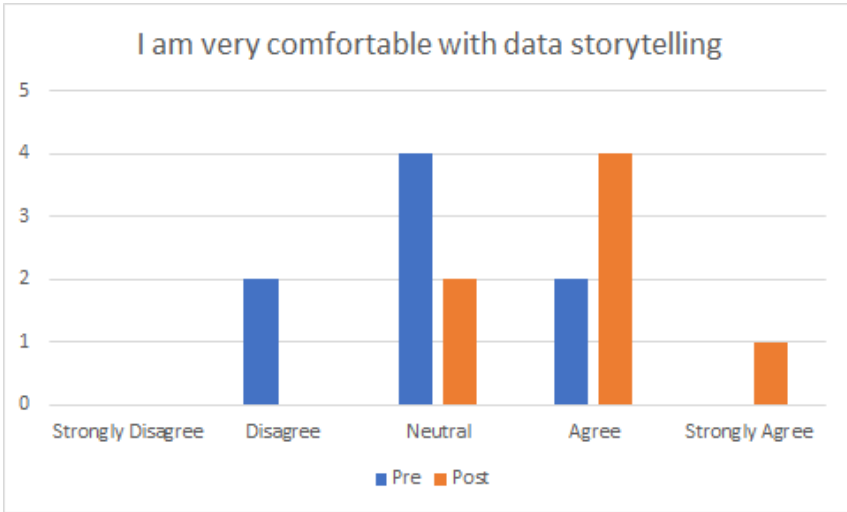
We asked the same five data questions before and after the short course and we did see improvement. Here are charts with the details:



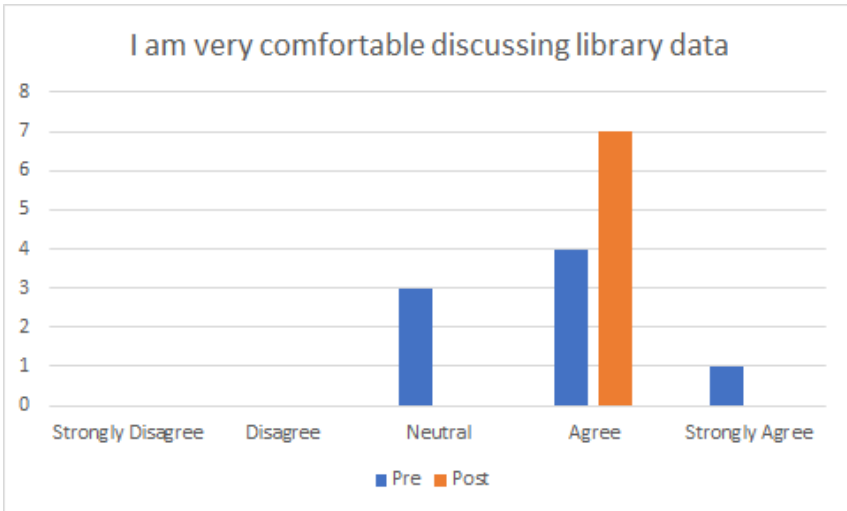
I am data literate – This one was interesting. The person who disagreed before the course, did not feel the same way after the course. Also, the two who strongly agreed before the course, did not feel the same way after the course.



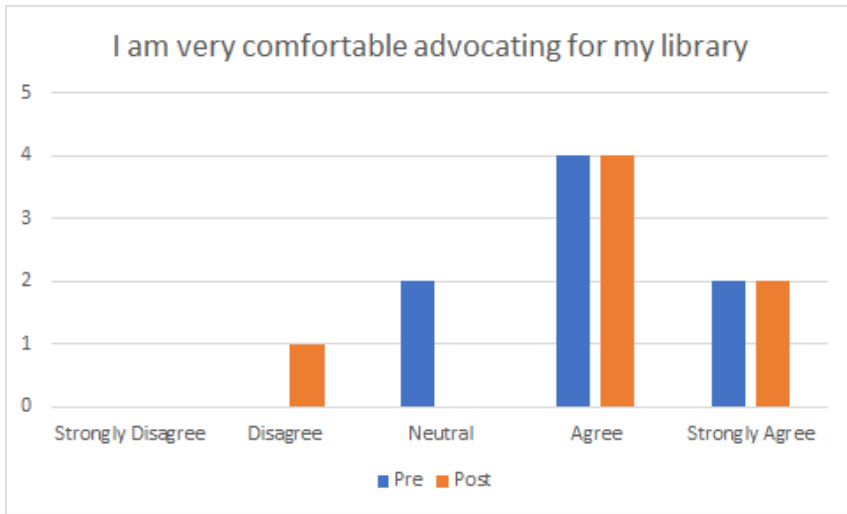
I am very comfortable making data visualizations – Here we did move the needle. Only two agreed before the course and five agreed after the course.



I am very comfortable with data storytelling – Here we did move the needle. Only two agreed before the course and five agreed after the course, with one strongly agreeing.



I am very comfortable discussing library data – This one was interesting. The three people who were neutral before the course, did not feel the same way after the course. Also, the one who strongly agreed before the course, did not feel the same way after the course.



I am very comfortable advocating for my library – Sadly, one person disagreed after the course (with no one disagreeing before the course).

Some of the responses to the final question: Anything else you want your facilitators to know?

- I had a wonderful experience in the class!
- Thank you so much for creating and teaching it. I learned so much!
- THANK YOU! I loved the class, just as I did last year, and I learned a TON. You two are a rock-star duo, and the group of folks you assembled was pretty amazing. I'll go to anything you put on.
- Thank you for all your work on this! It was no small thing to put together, and I learned many new things that I want to put into practice. I hope this happens again next summer. June might be easier for me, but July worked fine. Thanks again!
- I had fun doing this and learned a huge amount from the other librarians. Thanks for designing it.

A few more final thoughts, which are nearly the same as last year:

- Creating a visual aid (slides for most people) and video did seem to cause anxiety for some participants. These are great skills to have for outreach and teaching. In most cases, that anxiety can be overcome with continued practice.
- We all need practice talking about our data and we need to take those opportunities when they arise.
- Revision really helps, as does feedback from others.

ABOUT THE AUTHORS

Johnna Horton led the publishing of annual library reports in all three of her previous positions. Since 2017, she has put more emphasis on data visualization and storytelling techniques to provide accountability for PALS services to the Consortium of MnPALS Libraries, as well as Minnesota State leadership. As the PALS Executive Director, Johnna's work with librarians and system office personnel has helped her better understand how to address the communication gaps between library personnel and non-library administrators.

Jill Holman has been doing data projects for decades, starting with a statistical programming internship at the American Medical Association during college. Later, she studied research methods and statistics as part of her MLS program at the University of Michigan. She also enjoys teaching and has taught a couple credit-bearing courses and many workshops on various topics. Jill started with PALS in 2019 as the Systems Support and Training Librarian.