Data Storytelling Strategies

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Data Storytelling Strategies

By understanding storytelling dynamics, anyone can learn how to bring data stories to life. Data stories can help persuade decision-makers, but we need accessible tools for breaking down the dynamic process of storytelling into achievable steps. Based on ongoing research, this talk presents tools anyone can use, including:

- Introduction to storytelling thinking
- Classic advocacy arguments
- Evidence and forms of data for those arguments
- Narrative strategies that draw from common story structures
- Tone and tactics for engaging storytelling with different audience attitudes

One of the most critical things we can do to support institutions of higher education in challenging times is to be prepared, formally and in casual conversation, to tell a memorable data story about why they matter. This talk will guide you through the problems and practical possibilities of library data storytelling.

2023 Measures of Success Educator In Series

With special guest

Dr. Kate McDowell

Please join us via Webex for the virtual closing keynote of the Measures of Success Impact Series: Tuesday, March 21, 12-1 p.m.

Closing keynote:
"Data Storytelling Strategies"
Data Storytelling Strategies

Dr. Kate McDowell
School of Information Sciences
University of Illinois at Urbana Champaign
DATA STORIES
Agenda

1. Introduction to storytelling thinking
2. Classic advocacy arguments
3. Evidence and forms of data for those arguments
4. Narrative strategies from common story structures
5. Tone and tactics for engaging audiences with attitudes
Collaborations and consulting
Comfort levels: data and story
What is one data finding that you can measure and would like to tell as a story?
Storytelling Thinking
HOW STORYTELLING AFFECTS THE BRAIN

NEURAL COUPLING
A story activates parts in the brain that allows the listener to turn the story in to their own ideas and experience thanks to a process called neural coupling.

DOPAMINE
The brain releases dopamine into the system when it experiences an emotionally-charged event, making it easier to remember and with greater accuracy.

MIRRORING
Listeners will not only experience the similar brain activity to each other, but also to the speaker.

CORTEX ACTIVITY
When processing facts, two areas of the brain are activated (Broca’s and Wernicke’s area). A well-told story can engage many additional areas, including the motor cortex, sensory cortex and frontal cortex.
Augusta Baker, first to hold the position of Storytelling Specialist at the New York Public Library, emphasized the story rather than the storyteller,

“who is, for the time being, simply a vehicle through which the beauty and wisdom and humor of the story comes to the listeners.”
(Baker & Greene, 1977)
THE STORYTELLING TRIANGLE
TELLER × TALE × AUDIENCE
CYCLE OF STORY ACROSS TIME

RECEPTION × REITERATION × REVISIONING × RECREATION
Data Storytelling

A course in ethical and accurate information communication, situated in a world of burgeoning data and new storytelling challenges. We try to take on those challenges directly, acknowledging the flexibility of expression available in data and story while emphasizing honesty.

Co-created by Dr. Kate McDowell and Dr. Matt Turk, 2015-present, co-taught with Dr. Jill Naiman fall 2021, and Dr. Jill Naiman and Dr. Sharon Comstock co-taught spring 2021. Andy Zalot co-teaching spring 2023.
Stories open problems to collective innovation
Advocacy Arguments
Student success data needs story before storage
From the Data Storytelling Toolkit for Librarians

- IMLS-funded, Laura Bush 21st Century Librarian program
- with co-PI Matt Turk
- Toolkits for easy data storytelling for common data uses in libraries
  - Public
  - Community college
Plan for Data Storytelling Toolkit for Librarians

- **Phase 1:** Identify obstacles to data storytelling and recruit participants via a questionnaire and follow-up interviews. (6 months)

- **Phase 2:** Create the DSTL. Participants from phase 1 will be invited to a series of 2-hour small group online workshops. Participants will be organized into 2 or more cohorts of 10-15 librarians by specialty and 2 or more combined PL/CCL cohorts. (1 year)

- **NEW: Phase 3:** Pilot data storytelling toolkit through publicly advertised 1-hour introductory and 2-hour workshops of up to 80 online participants. (6 months)
Five Classic Arguments

1. **Understand** the real needs of learning communities
2. **Serve** the real needs of learning communities
3. **Compare well** with similar institutions of higher ed
4. **Build** on existing strengths
5. **Address** deficits
# Preview of Narrative Strategies

<table>
<thead>
<tr>
<th>Arguments</th>
<th>Narrative strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Understand</strong> the real needs of learning communities</td>
<td>Discovery</td>
</tr>
<tr>
<td><strong>Serve</strong> the real needs of their communities</td>
<td>Continuity or Transformation</td>
</tr>
<tr>
<td><strong>Keep up</strong> with other institutions of higher ed</td>
<td>Continuity</td>
</tr>
<tr>
<td><strong>Build</strong> on existing strengths</td>
<td>Transformation</td>
</tr>
<tr>
<td><strong>Identify</strong> and address deficits</td>
<td>Transformation</td>
</tr>
</tbody>
</table>
Evidence
Examples: Library data as evidence

Local data
• Community demographics
• Community surveys
• Service/program user surveys

Comparative data
• State or national agencies’ reports for comparative trends
• Other institutions’ published reports

Other
• other evidence of existing strengths
• other evidence of existing deficits
What kinds of data do you have as evidence?
WHO OWNS THE STORY?

- PEOPLE’S STORIES
- A CULTURE’S STORIES
- AN INSTITUTION’S STORIES
Nonprofit Stories

- Outward-facing stories
  - Origin, start, history
  - Major growth
  - Moments of mission accomplished
- Stories told from insiders to outsiders
  - Behind the scenes processes
  - Conflicts & transformations
  - Unsung heroes
Five Classic Arguments and Evidence

1. **Understand** the real needs of learning communities
   - Local community demographics or surveys

2. **Serve** the real needs of learning communities
   - Local community demographics or surveys
   - Examples of good services from other places

3. **Compare well** with similar institutions of higher ed
   - State or national reports
   - Other institutions’ reports

4. **Build** on existing strengths
   - Evidence of strengths: usage rate, surveys

5. **Address** deficits
   - Evidence of deficits: comparisons, surveys
Strategies
CYCLE OF STORY ACROSS TIME

RECEPTION × REITERATION × REVISIONING × RECREATION
First the pre-work

1. What information problem are you trying to solve?
2. What are the data sources? How are they meaningful?
3. Where’s the action? What’s the struggle?
4. What context is needed? What context can be cut?
Second, develop the story logic.

Data as character

Plot as order

Setting as context
CHRONOLOGICAL STRUCTURE

- Inciting Moment
- Exposition
- Rising Action
- Climax/Turning Point
- Falling Action
- Resolution/Denouement
- Denouement
RISING ACTION
1. Data as character
What are the numbers? What do they mean? How do they change? Compare?

2. Plot as order
What should the sequence be? What actions does the data suggest, describe, show?

3. Setting as context
What is just enough context? What is the minimum? What is the quickest path to action?
Remember:

What is one data finding that you can **measure** and would like to tell as a **story**?
Story Structures
1. Continuity
2. Transformation
3. Discovery
× CALL TO ADVENTURE
× SUPREME ORDEAL/INITIATION
× UNIFICATION/TRANSFORMATION
× ROAD BACK/HERO’S RETURN

HERO’S JOURNEY
ENIGMA CODE

QUESTIONS
(CLUES SUSPENSE)

ANSWERS
(EXPLANATIONS RESOLUTION)
inquiry

uncertainty
question
mystery

data
information
solution
Tone and Tactics
Audiences Have Attitudes

Positive

Negative

Mixed

Polarized
The Core Design Team

- 40 librarians from public and community college libraries
- From across the United States
- Participants in collaborative workshops from 2022-2023
- No more than 10 hours for the year
Positive

Tone
• Transparent, open.

Tactics
• Build trust.
• Don’t overestimate sympathy of audience or take it for granted.
• Make sure messaging is repeated or echoed.

Negative

Tone
• Model calm demeanor in face of aggressive manner.
• Don’t take it personally. Stay on message.
• Recognizing that aggression is a demonstration of fear; how can we turn fear into common strength?

Tactics
• Find a point of agreement--what is one thing we can agree on?
• Active listening and acknowledge concerns/validating them as a person/reframe-restate what you are hearing in a positive way
• What is actual issue? "Reference interview"
• Ask questions to clarify their concerns/issues
• Consider planning a compromise in advance, making a larger ask with a fall-back option.
Mixed

• **Tone**
  • Transparent and open.
  • Model calm demeanor in face of aggression.

• **Tactics**
  • Don’t overestimate audience sympathy or take it for granted.
  • Find a point of agreement.
  • Active listening and acknowledge concerns/validating them as a person/reframe-restate what you are hearing in a positive way.
  • What is the actual issue?
Polarized

Tone
• Calm, nonreactive.  
• Establish a shared language with those involved in the decision-making from the outset.  
• Ask questions:  
  • Why is this happening?  
  • Why has this issue been chosen?  
  • What are our goals?

Tactics
• Connect goals with community/patron needs. It's not personal. It's not "Librarian XYZ"'s agenda, but a response to a real need.  
• Research counterarguments/ popular misinformation, and provide evidence/stories that address misconceptions.  
• Focus on winning over the voting majority. Stay the course. This may require consistent reinforcing of message.
## Data Storytelling Obstacles for Librarians

**Overview of Findings**

<table>
<thead>
<tr>
<th>Qualitative Data Sources</th>
<th>Primary Obstacles Identified</th>
</tr>
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<tbody>
<tr>
<td>Interviews</td>
<td>Fear of data, too little time, lack of story strategies</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>Tools, training, connecting to audience, lack of time</td>
</tr>
<tr>
<td>Ranking Exercise</td>
<td>Time consuming, data are misread, data are not used, narrow focus on “the number”</td>
</tr>
<tr>
<td>Workshop Discussions</td>
<td>Data collected but not used, unclear how to tell the story of the library, unsure how to tell stories</td>
</tr>
</tbody>
</table>
Two kinds of obstacles

1. Emotions and attitudes
   • Fear of data
   • Fear of story

2. Time, tools, and training
Dear Data: Visual Strategies for Developing Stories

- Anything can be measured, objects to experiences and beyond
- Full of creative hand-drawn data visualization
Counting: Numeric Strategies for Developing Stories

• Numbers are not more real than other kinds of data
  • “Counting is a lot like being a judge. Before we can count up ‘somethings’ we have to decide what counts as a something.” (p. 179)

• Finding ways to measure value requires both creativity and integrity
Questions?
Thank you!

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• https://uiucdstl.wixsite.com/uiucdstl
References


• McDowell, K. (2021). Storytelling wisdom: Story, information, and DIKW. *Journal of the Association for Information Science and Technology, 72*(10 (Special Issue: Paradigm Shift in the Field of Information)), 1223–1233. [https://doi.org/10.1002/asi.24466](https://doi.org/10.1002/asi.24466)

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