# Does it make a difference?

The impact (or not) of data visualization on evaluation use

Sena Sanjines
AEA Annual Conference 2018
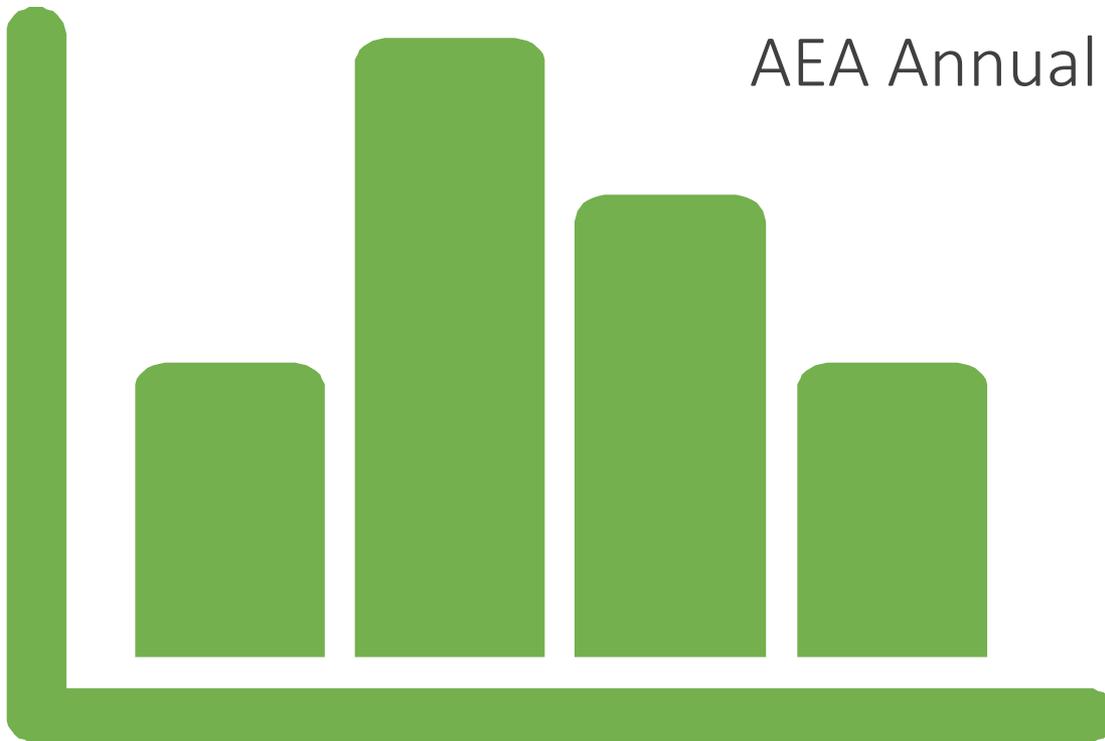
The problem

We want to avoid this.
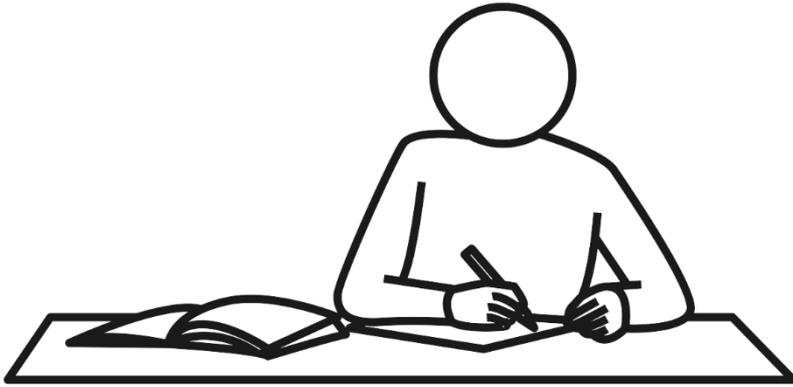
Not the people who read our reports

The people who read our reports

Does <u>use</u> of data visualizations increase the likelihood reports will be used?

Does the quality of data visualizations increase the likelihood reports will be used?

What are data visualizations?

Images based on data that are representative of the data, readable, and support exploration, examination, and communication of the data. (Azzam, Evergreen, Germuth, & Kristler, 2013, p.9)
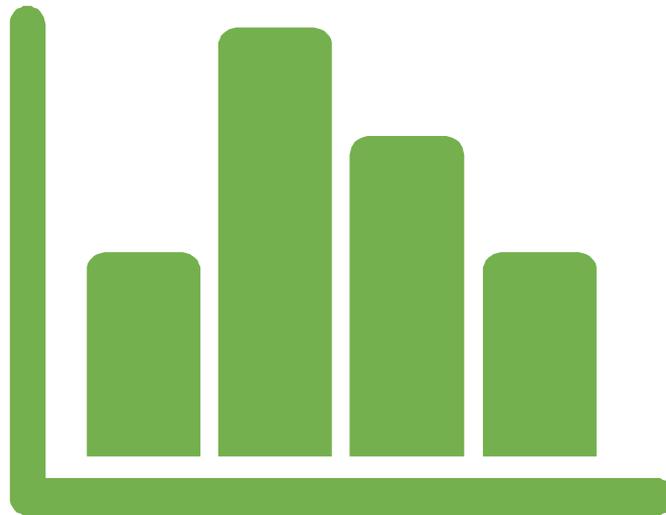
The context
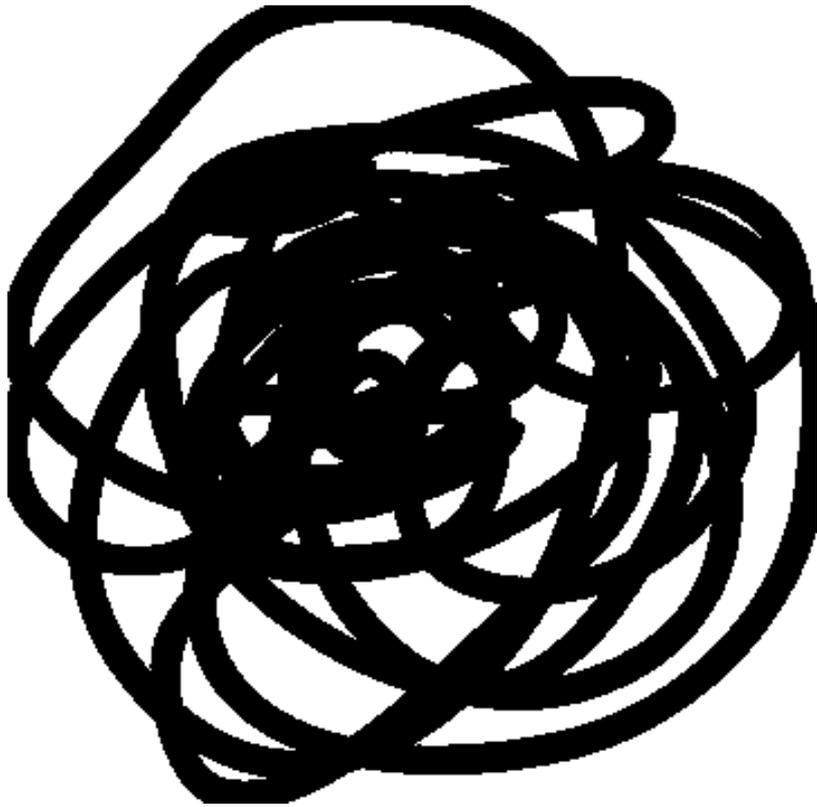
Use is messy

But not in my study!

You were referenced?
Great!
You count as "used"

- ✓ Length of report
- ✓ Type of report (credibility)
- ✓ User affiliation with a university
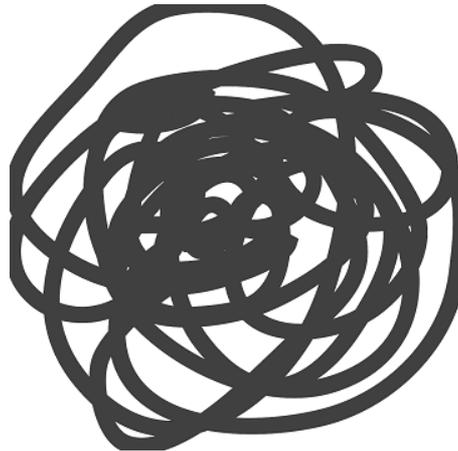
Methodology

Study design

Part 1
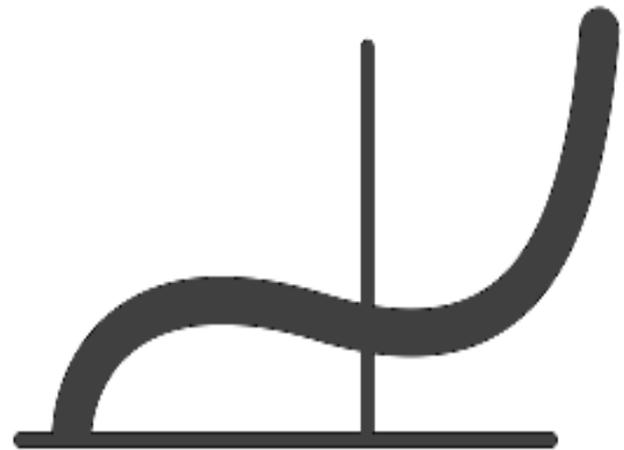
Part 2

The Data

Reports submitted as part of legislative testimony between 2000 and 2015 related to teacher quality.*

Report Sample (*N*=215)	
Use once	169 (79%)
Used more than once	46 (21%)

*Shared by Reckhow and Tompkins-Stange (2015)

The Variables

Viz: Percent of data viz to pages

Quality: Data Visualization Checklist*

Length: Number of pages

Type: More like traditional research or advocacy research

Affiliation: Witness worked for a university

*Evergreen & Emery (2016)

Type of Report

Traditional   Advocacy

0   16

- ✓ Producer   ✓ Evidence
- ✓ Conclusions   ✓ Citations
- ✓ Policy   ✓ Tone
  recommendations   ✓ Methods
- ✓ Production quality
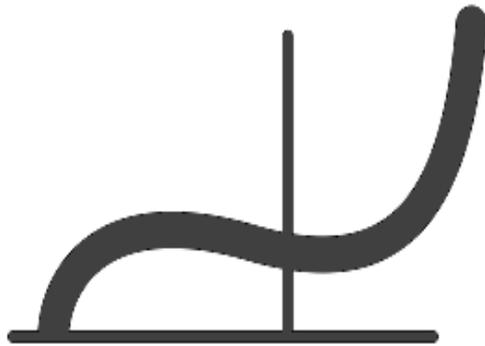
Analysis

Analysis

Poisson regression x 2
1. Full sample (N=215)
   Percent of data viz + length, type, and user affiliation

2. Sub-sample (N=93)
   DVC score + length, type, and user affiliation

Results

Does <u>use</u> of data visualizations increase the likelihood reports will be used?

Does <u>use</u> of data visualizations increase the likelihood report findings will be used?

No

Parameter Estimates for Data Visualizations (*N*=215)

Parameter	B	SE	Wald Chi-Square	df	Sig.	Exp(B)
(Intercept)	-1.043	0.219	22.656	1	0	0.352
Visualizations	0.113	0.100	1.274	1	0.259	1.120
Length	0.000	0.115	0.000	1	0.997	1.000
Type	0.247	0.131	3.567	1	0.059	1.280
Affiliation = 0	-0.167	0.271	0.379	1	0.538	0.846
Affiliation = 1	0[a]					1

a. Fixed at the displayed value.

Does the quality of data visualizations increase the likelihood reports will be used?

Does the quality of data visualizations increase the likelihood report findings will be used?

No

Parameter Estimates for Quality of Data Viz (*N*=93)

Parameter	B	SE	Log-L Chi-Square	df	Sig.	Exp(B)
			Hypothesis Test			
(Intercept)	-0.94	0.34	45.02	1	0.00	0.39
DVC	0.10	0.18	0.31	1	0.58	1.11
Length	-0.51	0.28	4.37	1	0.04	0.60
Type	0.3	0.20	3.10	1	0.05	1.48
Affiliation = 0	-0.38	0.41	0.80	1	0.38	0.67
Affiliation = 1	0[a]					1

a. Fixed at the displayed value.

- ✓ Length of report
- ✓ Type of report (credibility)
- ✓ User affiliation with a university
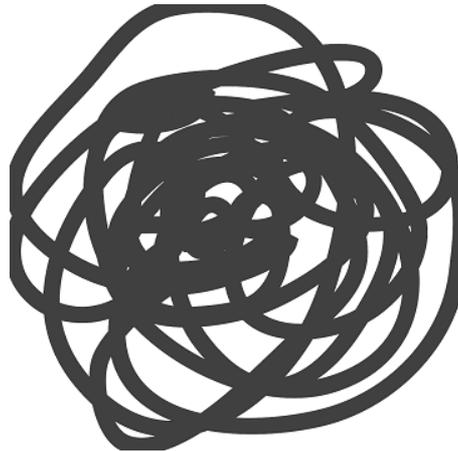
✓ Length of report
✓ Type of report (credibility)

Yes

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Considerations and limitations

Considerations
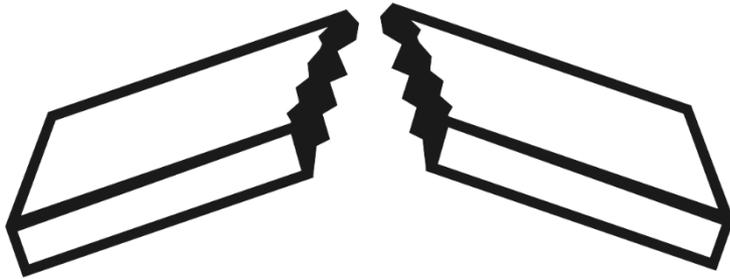
Breaks with prior

Political setting

Limitations

Political context
Frequency of use
Other factors out there

The takeaway

(www.forhumanpeoples.com)

Mahalo!

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References

Azzam, T., Evergreen, S., Germuth, A. A., & Kistler, S. J. (2013). Data visualization and evaluation. In T. Azzam & S. Evergreen (Eds.), *Data visualization, part 1: New Directions for Evaluation, 139*, 7—32. http://doi.org/10.1002/ev.20065

Evergreen, S. & Emery, A. K. (2016). *The data visualization checklist*. Retrieved from http://stephanieevergreen.com/wp-content/uploads/2016/10/DataVizChecklist_May2016.pdf

Reckhow, S., Holden, L., & Tompkins-Stange, M. (2015). *Patron of ideas: How advocacy research influences the education policy debate*. Paper presented at the American Political Science Association Annual Meeting, September 2015. San Francisco, CA