Creative data-analysis protocols for analyzing instructional impact

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Measurement & Assessment Coaches

Special School District of St. Louis County, St. Louis, MO
December 2019
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Welcome & Introductions

Amber Del Gaiso
Scott Crooks
Allison Harris

Measurement & Assessment Coaches

Special School District of St. Louis County, St. Louis, MO
Q: What are learning outcomes?

A: Abilities

- Understand how a district/school can use a data-informed approach to make decisions about instruction and professional learning
- Identify methods & tools that can be used for data analysis in your district/school
- Identify methods & tools that can be used to incorporate data into your professional learning
Agenda

- Data storytelling for summarizing and analyzing district-wide or school-wide data
- Implementing changes to instruction and professional learning based on data
- Using data within professional learning
What do you wonder about today’s topic?
Why tell a data story?

“For the largest number of people, provide the greatest degree of understanding with the least amount of effort.”

Cole Nussbaumer Knaflic, storytellingwithdata.com
The average human attention span in 2000 was 12 seconds.
The average human attention span in 2013 was 8 seconds.
The average attention span of a goldfish is 9 seconds.
Nancy Duarte on data storytelling
<table>
<thead>
<tr>
<th>Commandment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BEGIN WITH A QUESTION</td>
<td>Set up your story. What is your audience going to learn?</td>
</tr>
<tr>
<td>2. END WITH AN INSIGHT</td>
<td>If we can’t learn something useful from the data, the story isn’t worth telling</td>
</tr>
<tr>
<td>3. TELL A COMPELLING STORY</td>
<td>People remember stories, not data. Take them on your journey.</td>
</tr>
<tr>
<td>4. EXPLAIN WITH VISUALS, NARRATE WITH WORDS</td>
<td>People understand metrics, trends and patterns better with visuals. Use words to add your voice to the data.</td>
</tr>
<tr>
<td>5. BE HONEST AND CREDIBLE</td>
<td>The clients we want value honesty. Don’t exaggerate the negatives.</td>
</tr>
<tr>
<td>6. BE CLEAR AND CONCISE</td>
<td>Remove everything that is not part of your story. Save the good bits for another time.</td>
</tr>
<tr>
<td>7. KNOW AND CATER TO YOUR AUDIENCE</td>
<td>What are their interests and goals? Do they want the details, or just the high-level summaries?</td>
</tr>
<tr>
<td>8. PROVIDE CONTEXT</td>
<td>Compare metrics over time or to industry benchmarks. Numbers are meaningless without context.</td>
</tr>
</tbody>
</table>
Our journey with data stories...
Data Story Examples
# District A’s Year in Review 2018-19

## % of Students Screened in Spring
(includes students 2nd-8th who have a goal in that area)

<table>
<thead>
<tr>
<th>Area</th>
<th>% of Students Screened</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>65%</td>
</tr>
<tr>
<td>Math</td>
<td>54%</td>
</tr>
</tbody>
</table>

**Target** is to screen at least 80% of students with goals in the area.

## % of Students Meeting Growth Target
(Fall-Spring)
(includes students who have both a Fall *and* Spring score)

<table>
<thead>
<tr>
<th>Area</th>
<th>% of Students Meeting Growth Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>15%</td>
</tr>
<tr>
<td>Math</td>
<td>17%</td>
</tr>
</tbody>
</table>

**Target** is 60th growth percentile by start score. This means that the student is growing faster than 60% of peers who started at the same point they did.

## # of students with a suspension
(Based on data shared with Matt Traughber)

<table>
<thead>
<tr>
<th>Area</th>
<th># of students with a suspension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior</td>
<td>7.3%</td>
</tr>
</tbody>
</table>

## Top 3 areas of coaching support

1. Behavior
2. Literacy
3. Autism

## Top 3 areas of discussion at data teams

1. Literacy
2. Behavior
3. Autism

## Professional Learning Topics

1. Behavior
2. Specialized Instruction
3. Autism

## Academy coaching topics

1. Explicit Instruction
2. Learning Goals
3. Student Engagement

## 27 Data Team Meetings

Held 13 Elementary, 9 Middle, and 5 High

## 136 hours of coaching from TAT members

## 9 Professional Learning events staff participated in

## 44 Academy Coaching visits
Our literacy year in review 2018-19

Currently **4 out of 10** students are meeting reading growth targets. Our target is 10 out of 10.

67% of students with reading goals were screened.

**Literacy PL**
- Zone 1: 2
- Zone 2: 11
- Zone 3: 2
- County-wide: 9

**Literacy Coaching Hours**
- Zone 1: 120
- Zone 2: 141
- Zone 3: 438

**Top Academy HLP Practices**
- 44% Assessment: HLP 6 - Student Assessment Data
- 42% Instruction: HLP 16 - Explicit Instruction
- 37% Social/Emotional/Behavioral Practices: HLP 7 - Learning Environment
- 32% Instruction: HLP 12 - Learning Goals
- 17% Instruction: HLP 18 - Student Engagement
- 16% Social/Emotional/Behavioral Practices: HLP 8 - Feedback
Our behavior year in review 2018-19

Broad Outcome Data

County-wide, 6% of students with IEPs have received OSS this school year.

But this varies across zones...

<table>
<thead>
<tr>
<th>Zone 1</th>
<th>Zone 2</th>
<th>Zone 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>4%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Behavior PL

- Zone 1: 20
- Zone 2: 22
- Zone 3: 36
- County-wide: 22

Behavior Coaching Hours

- Zone 1: 278
- Zone 2: 443
- Zone 3: 636

Most Supported Academy HLP Practices

- 44%: Assessment: HLP 6 - Student Assessment Data
- 42%: Instruction: HLP 16 - Explicit Instruction
- 37%: Social/Emotional/Behavioral Practices: HLP 7 - Learning Environment
- 32%: Instruction: HLP 12 - Learning Goals
- 17%: Instruction: HLP 18 - Student Engagement
- 16%: Social/Emotional/Behavioral Practices: HLP 8 - Feedback
What data sources do you have that might work well in a data story format?
Finding the story...
Finding the story!

Let’s practice building a narrative with one of these 5 story types:

- Factoid stories
- Interaction stories
- Comparison stories
- Change stories
- Personal stories
For this activity you will...

Find a partner & use one of the “finding a story” worksheets with one of our data sets & see what you can come up with! We’ll be sharing our best ideas in a few minutes!

Bonus points: How might you construct the data visual differently to emphasize your chosen story?
Data Story Templates
% of Students Screened in Winter (includes students 2nd-8th who have a goal in that area)

- aReading: ##%
- aMath: ##%

Target is to screen at least 80% of students with goals in the area.

% of Students Meeting Growth Target (Fall-Winter) (includes students 2nd-8th who have both a Fall and Winter score)

- aReading: ##%
- aMath: ##%

Target is 60th growth percentile by start score. This means that the student is growing faster than 60% of peers who started at the same point they did.

## hours of (non-academy) coaching from TAT members

- Top 3 areas of coaching support:
  1. 
  2. 
  3.

Academy Support

- ## teachers in Academy
- ## visits (coaching and observation)
- Top 3 Academy coaching supports
  1. 
  2. 
  3.

Data Teams

- Number of Meetings: ##
- Administrator present: ##%

Top 3 areas of discussion
  1. 
  2. 
  3.

Multiple sources of data could be reviewed by the team

- Team 1: 24%
- Team 2: 36%
- Team 3: 65%
- Team 4: 100%

Action plans were made by the team

- Team 1: 30%
- Team 2: 36%
- Team 3: 70%
- Team 4: 85%
Most important information

Expand on takeaways

Further details
Creation Tools
Tableau and Tableau Public

Connect to almost any database, drag and drop to create visualizations, and share with a click (we use this to find the story)
Microsoft Power BI

Connect to almost any database, drag and drop to create visualizations (alternative to Tableau)
Google Drawing

Endless possibilities (this is how we designed our data stories)
Venngage and Canva

Free, easy to use infographic makers
The Noun Project

Millions of free icons and symbols
Which tools might you explore further?

What’s a potential next step for you regarding creating a data story?

Students, write your response!
Stretch Break!

Let’s take 2 minutes to stretch!
Agenda

- Data storytelling for summarizing and analyzing district-wide or school-wide data
- Implementing changes to instruction and professional learning based on data
- Using data within professional learning
Data to Inform PL Cycle Behavior PL Example

We’re hoping to change:

- Students have improved self-regulation skills and staff understand how to intervene more effectively

What data would tell us that?

- Behavior data (suspensions, staff injuries, more restrictive placements)
- PL attendance data including years since behavior PL received

After reviewing our key takeaways are:

- After training behavior outcomes improve but the longer it’s been since training the worse the data gets

Because of that we need to change:

- Certain behavior PL should be retrained on a regular cycle
Data to Inform PL Cycle Measurement Example

We’re hoping to change:

- Improved staff skills with and use of our new assessment system

What data would tell us that?

- Rates of screening and progress monitoring
- Coaching observations data related to comfort level with system

After reviewing our key takeaways are:

- Many staff still lack confidence using the system and staff report feeling overwhelmed with and amount of learning

Because of that we need to change:

- PL broken into parts with staff tasks in-between
- Increased focus on coaching and ways to access coaching support
Your Turn!

Click on the picture to the right
Select “make a copy”
Enter info into the first 2 boxes
High-level data conversations
The Protocol: Data-Driven Dialogue

PHASE 1: Predict
Surfacing experiences, possibilities, expectations
- With what assumptions are we entering?
- What are some predictions we are making?
- What are some questions we are asking?
- What are some possibilities for learning that this experience presents us with?

PHASE 2: Observe
Go Visual!
- Analyzing the data
  - What important points seem to “pop out”?
  - What are some patterns or trends that are emerging?
  - What seems to be surprising or unexpected?
  - What are some things we have not explored?

PHASE 3: Infer/Question
- Generating possible explanations
  - What inferences and explanations can we draw?
  - What questions are we asking?
  - What additional data might we explore to verify our explanations?
  - What tentative conclusions might we draw?


A Data Coach’s Guide to Improving Learning for All Students: Unleashing the Power of Collaborative Inquiry © 2008 by Corwin Press. All rights reserved.
Surfacing Experiences, Possibilities, Expectations

Guiding Questions: When considering the possible data...

- With what assumptions are we entering?
- What are some predictions we are making?
- What are the assumptions underlying the predictions?
- What are some questions we are asking?
- What are some possibilities for learning that this experience presents us with?
Phase 2: Go Visual

- Don’t talk about the data... yet
- Just look at the data
- Think about what you are seeing
Phase 3: Observe

Warnings:

- Do not ask why
- Do not generate hypotheses
Phase 3: Observe

Analyze the Data: Dialogue

Guiding Questions

- What important points seem to pop out?
- What are some patterns or trends that are emerging?
- What seems to be surprising or unexpected?
- What are some things we have not explored?
Generating Possible Explanations

Guiding Questions

- What inferences and explanations can we draw?
- What questions are we asking?
- What additional data might we explore to verify our explanations?
- What tentative conclusions might we draw?
| Where do we go from here? | How do we get the answers we need so we can better serve the students? | What might we do differently as a result of our conclusions? |
What are ways you help ensure a change occurs?

- CSIP?
- Integrating into existing initiatives?
- Working with stakeholders?

Students, write your response!
Agenda

- Data storytelling for summarizing and analyzing district-wide or school-wide data
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Using Data within Professional Learning

Variety of methods for incorporating data into professional learning in a meaningful way, such as:

- Data that led to implementation of a specific practice
- Audience response tools for adjusting content & pacing, and to gather feedback
- PLC/data team process as a model of high-quality professional learning
Data that led to the implementation of a practice

Our student data from 18-19:

- Currently \( \frac{4}{10} \) students are meeting reading growth targets.
- Our target is \( \frac{10}{10} \).

67% of students with reading goals were screened.

Research-based practices embedded within this intervention (SIPPS):

Hattie's 2018 updated list of factors related to student achievement: 252 influences and effect sizes (Cohen's d)

Source: J. Hattie (December 2017) visiblelearningplus.com

Source: Hattie's 2018 updated list of factors
Audience response tools

Peardeck is a favorite! Others that we like:

Kahoot
Quizizz
Plickers
Go Formative
PLC/Data Team Process

Hattie's 2018 updated list of factors related to student achievement: 252 influences and effect sizes (Cohen’s d)

Source: J. Hattie (December 2017) visiblelearningplus.com

Source: Hattie’s 2018 updated list of factors
Key Lessons Learned...

To ensure fidelity of data collection & data analysis:

- Teachers required training & extensive follow up coaching on assessment tools
- Teachers needed ongoing support during data team meetings to improve data analysis skills
- Data Team Leaders skills were developed through ongoing professional learning cohort (meet 3x a year).
- Process is important! Provided resources for establishing norms, roles, meeting procedures, and meeting evaluation.
- Accountability measures in place to ensure fidelity of implementation & identify areas in need of support.
Questions include:

- Were norms established/reviewed?
- Were roles assigned?
- Was an administrator present?
- What % of staff were in attendance?
- % of students discussed with multiple sources of data
- % of the time action plans were generated by the team
- Major areas discussed
Explore links below, and tell us, which of the four resources are you most likely to take & use?

SSD Data Team Mission & Guidelines

Data Team Meeting Roles

Data Team Talking Points Graphic Organizer

Our bank of vetted Intervention resources

All of these resources & more can be found here: SSD Data Team Site
Q: What are learning outcomes?

A: Abilities

- Understand how a district/school can use a data-informed approach to make decisions about instruction and professional learning
- Identify methods & tools that can be used for data analysis in your district/school
- Identify methods & tools that can be used to incorporate data into your professional learning
In one minute, write the most important thing (to you) from today’s session.
Take our 3 minute survey!

kickup.co/2019LF

SESSION ID: 1222

NOTE: Session ID should be in all CAPS and is case-sensitive.

Your responses power our kickup report.

Access our slides at: https://tinyurl.com/creativedata2019, & contact us at akdelgaiso@ssdmo.org (Amber), sdcrooks@ssdmo.org (Scott), or aeharris@ssdmo.org (Allison)