Framing the Data Story: What’s Your Sticky?

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Before We Get Started...

Please take a moment to reflect on the following questions and discuss them with a colleague:

- How do you typically communicate research findings to your campus community?
- What are participant reactions (and actions) to these research products?
Researchers and Planners are...

- Data stewards
- Skilled at finding needles in a haystack
- Good at helping people connect the dots
- Able to see the big picture and fine details

Researchers must also be good storytellers
The Functions of Presentations

✓ To inform
✓ To empower decision makers
✓ To engage in conversation
✓ To facilitate decision-making
✓ To get audience members to think differently about a topic
✓ To provoke audience reflection on a topic
Developing messages that stick

People tend to have highest levels of engagement & retention when the *story* is:

1. **Simple** - Can be easily summarize in a sentence.
2. **Unexpected** - Provides viewers a drama *they want to retell*
3. **Concrete** - has few abstractions
4. **Plausible** - passes the sniff test
5. **Emotional** - speaks to things humans care about
Think about the “So What”
*Why should people care about the data?*
Pause to Reflect and Discuss with a Colleague

• For what **purpose** do you typically prepare presentations?
  • To inform?
  • To engage?
  • To generate ideas?
  • To start action planning?

• What tools do you use (e.g., software, text, visuals)?
Thought for Consideration

Informative Presentations Alone ≠ Engagement & Decision-Making

Intentionally Designed Presentations + Purpose = Data-informed decision-making
How Can We Reframe Our Presentations?

• Bring together elements of your presentation to tell a story

Before preparing a presentation, consider:
✓ The audience
✓ The message – the takeaway(s) for the audience
✓ The purpose/objective
✓ The desired outcome (“so what now?”)
Few’s 8 Design Principles

1. Simplify
2. Compare
3. Attend
4. Explore
5. View Diversely
6. Ask why
7. Be skeptical
8. Respond

For more, see Stephen Few’s Core Principles
Data “don’t” speak

Understand
Visualize
Process
Engage
Use
Rates of degree/cert completion per group

- Females had a 68% rate (compared to males who had a rate of 28%)

Red 3 DI measures
Orange = 2 measures of DI
Yellow = 1 measure of DI

Understand
Visuals vs. Data Visualization

Visualizations (noun):
• Portals that serve as interfaces to interpersonal engagement
  • Provide situational awareness - Where you are and where you want to be

What’s the Point of the Presentation/Report?
Why visuals?

How your brain divvies up tasks:

- Processing text: 80%
- Processing visual information: 15%
- Processing audio information: <5%

Charts, Tables, and Infographics: Dos and Don’ts

Preparing to Measure Our Progress

Envisioning our CCC Pathways baseline (2015-16) cohort...

- **15%** Complete Transfer-Level Math in First Year
- **21%** Complete Transfer-Level English in First Year
- **9%** Complete Both Transfer-Level Math and English in First Year
- **25%** Earn 15+ Units in First Year

Source: CalPASS Plus/Launchboard Guided Pathways Dashboard
### Tables: How We Often

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Enrolled</th>
<th>Retention Rate</th>
<th>Success Rate</th>
<th>Course GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>300</td>
<td>87%</td>
<td>55%</td>
<td>2.12</td>
</tr>
<tr>
<td>American Indian</td>
<td>16</td>
<td>75%</td>
<td>63%</td>
<td>2.36</td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td>2.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filipino</td>
<td></td>
<td>2.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>2.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td></td>
<td></td>
<td></td>
<td>2.41</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td>2.78</td>
</tr>
</tbody>
</table>

This is not generally the reaction we are looking for
Tips for Improving Your Tables

• Leverage color and shapes
  – For college branding
  – To direct audience attention to where you want it
  – Gradient (for heat maps)

• Think about the purpose of the table
  – Is it descriptive? Comparative? Does it illustrative a progression of information?

• Put yourself in your audience’s shoes
## A Data Viz Table: Math Cohort Tracking – Starting in Fundamentals

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals</td>
<td>1,863</td>
<td>1,215</td>
<td>939</td>
<td>624</td>
<td>331</td>
<td>212</td>
<td>134</td>
<td>99</td>
</tr>
<tr>
<td>% of starting cohort</td>
<td>100%</td>
<td>65%</td>
<td>50%</td>
<td>33%</td>
<td>18%</td>
<td>11%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>% from previous step</td>
<td>---</td>
<td>65%</td>
<td>77%</td>
<td>66%</td>
<td>53%</td>
<td>64%</td>
<td>63%</td>
<td>74%</td>
</tr>
</tbody>
</table>

*Note: Fundamentals = Math 811, Beginning Algebra = 110 or 111+112, Intermediate Algebra = 120 or 122+123, Transfer = 130, 150, 200-level

Visual by Greg Stoup
### Color Gradient: Heat Mapping

#### Schedule Capacity View

<table>
<thead>
<tr>
<th>Top 5 Time Slots</th>
<th>Bottom 5 Time Slots</th>
<th>Drill Down - School</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day</strong></td>
<td><strong>Time Block Start</strong></td>
<td><strong>Day</strong></td>
</tr>
<tr>
<td>2. Tuesday</td>
<td>10:00 AM</td>
<td>2. Tuesday</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>3:281</td>
<td>3. Wednesday</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>3:213</td>
<td>4. Thursday</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>2,928</td>
<td>5. Friday</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>2,966</td>
<td></td>
</tr>
</tbody>
</table>

#### Heat Map

<table>
<thead>
<tr>
<th>Time Block</th>
<th>M</th>
<th>Tu</th>
<th>W</th>
<th>Th</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 AM</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>319</td>
<td>378</td>
<td>378</td>
<td>378</td>
<td>378</td>
</tr>
<tr>
<td>7:30 AM</td>
<td>1,276</td>
<td>1,867</td>
<td>1,867</td>
<td>1,773</td>
<td>1,773</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>1,707</td>
<td>2,319</td>
<td>2,298</td>
<td>2,167</td>
<td>158</td>
</tr>
<tr>
<td>8:30 AM</td>
<td>1,510</td>
<td>2,153</td>
<td>2,125</td>
<td>2,006</td>
<td>198</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>1,811</td>
<td>2,474</td>
<td>2,432</td>
<td>2,392</td>
<td>247</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>1,239</td>
<td>2,018</td>
<td>1,975</td>
<td>1,891</td>
<td>247</td>
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<td>2,971</td>
<td>2,928</td>
<td>2,814</td>
<td>247</td>
</tr>
<tr>
<td>10:30 AM</td>
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<td>2,226</td>
<td>2,154</td>
<td>2,193</td>
<td>109</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>2,161</td>
<td>3,281</td>
<td>3,213</td>
<td>2,966</td>
<td>417</td>
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<tr>
<td>11:30 AM</td>
<td>1,700</td>
<td>2,424</td>
<td>2,388</td>
<td>2,266</td>
<td>279</td>
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<td>12:00 PM</td>
<td>1,770</td>
<td>2,711</td>
<td>2,704</td>
<td>2,483</td>
<td>224</td>
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<tr>
<td>12:30 PM</td>
<td>1,635</td>
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<td>2,444</td>
<td>2,317</td>
<td>224</td>
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<td>2,103</td>
<td>1,976</td>
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<tr>
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<td>1,351</td>
<td>2,167</td>
<td>2,160</td>
<td>2,004</td>
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<tr>
<td>2:00 PM</td>
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<td>2,150</td>
<td>2,143</td>
<td>1,987</td>
<td>194</td>
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</tbody>
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You Can Even Take the Numbers Away

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<th>BS Math</th>
<th>BS ESL</th>
<th>Persistence</th>
<th>Distance Ed</th>
<th>Face-to-Face</th>
<th>30-unit prepared</th>
<th>30-unit unprepared</th>
<th>Transfer Prepared</th>
<th>Degree/Cert</th>
<th>3-years to Transfer</th>
<th>6-years to Transfer</th>
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<tbody>
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<td>Latino/Hispanic</td>
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<td>EOPS</td>
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<td>Econ Disadvantage</td>
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<td>Econ Disadvantage</td>
<td>Econ Disadvantage</td>
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<tr>
<td>Foster Youth</td>
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<tr>
<td>Veterans</td>
<td>Veterans</td>
<td>Veterans</td>
<td>Veterans</td>
<td>Veterans</td>
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</tr>
</tbody>
</table>

Student Equity Data 2015-16

Legend:
- Red
- Orange
- Yellow
Charts: The Default Bar Chart

Completion Rate by Ethnicity

- Prepared Completion Rate
- Unprepared Completion Rate

![Bar Chart showing completion rates by ethnicity with a sad face sticker]
Charts: The Default Pie Chart

Ethnicity

- African American: 9%
- Asian: 18%
- Latinx: 36%
- Native American: 5%
- Pacific Islander: 5%
- White: 27%
Let’s Talk Charts:
Some Dos and Don’ts

**Don’t:**
- Use 3-D (please!)
- Include lines/labels that draw the audience’s attention away from your main points (the story)

**Do:**
- Make your chart look like you used something other than MS Excel (even though you did)
- Use color to draw attention to your main points (highs, lows)
- Avoid pie charts whenever possible!
An Improved Chart

*Preparedness* is one of the biggest predictors of student completion

- Unprepared
- Prepared

Average:
- Prepared: 70%
- Unprepared: 40%
Don’t fear the crappy first draft
Don’t fear the crappy first draft

Greg Stoup, 2014
### Activity: Design Your Chart or Table

In your group, use the markers and giant Post-It paper to design a chart or table to respond to this question...

**What are our English placement rates?**

**Do they differ by ethnicity?**

<table>
<thead>
<tr>
<th>Group</th>
<th>Total Number</th>
<th>Percent of Total</th>
<th>Number Placing at Transfer Level</th>
<th>Percent Placing at Transfer Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>124</td>
<td>6%</td>
<td>15</td>
<td>12%</td>
</tr>
<tr>
<td>Asian</td>
<td>256</td>
<td>12%</td>
<td>77</td>
<td>30%</td>
</tr>
<tr>
<td>Latinx</td>
<td>872</td>
<td>40%</td>
<td>140</td>
<td>16%</td>
</tr>
<tr>
<td>White</td>
<td>740</td>
<td>34%</td>
<td>296</td>
<td>40%</td>
</tr>
<tr>
<td>Other</td>
<td>208</td>
<td>9%</td>
<td>21</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,200</strong></td>
<td><strong>100%</strong></td>
<td><strong>549</strong></td>
<td><strong>25%</strong></td>
</tr>
</tbody>
</table>
Infographics

But only 1 in 4 students falls into the “prepared” bucket

And...

Equity implications: We know from statewide research that disproportionately low percentages of underrepresented students land in the “prepared” bucket
And Speaking of Infographics...

They are wonderful tools, but there are a few things you should consider:

• The audience
• Reporting media (PPT, flyer, brochure, website)
• *What’s your data story?*

And ask yourself: Do the data lend themselves to an infographic?
Four orientations of creative infographics

- What is the explicit objective of this piece of work?
- What will that get you?
- And what will that get you?

Purpose

Is this piece of work compelling?
Does it build awareness?
Does it call people to act?
What is its tone?

Story

Audience

- Who is this piece of work aimed at?
- Are they prepared to hear it?
- What expectations might they have?

Research

- What is the validity of this piece of work based on?
- Who will see it as credible and why?
- How might its substantiation be challenged?
Two options at each corner guide the development of a visual.
Some Examples of Infographics

COPPER MOUNTAIN COLLEGE

Course Completion Rate Calculation
ACADEMIC YEAR 2013-14

<table>
<thead>
<tr>
<th>Total Grades</th>
<th>A, B, C, Or P</th>
<th>D, F, Or Np</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,096</td>
<td>7,019</td>
<td>1,889</td>
<td>1,188</td>
</tr>
</tbody>
</table>

**COURSE COMPLETION RATE**

\[
\frac{7,019}{10,096} = 69.5\%
\]

Visual by Jake Kevari
More Examples of Infographics

THE TRADITIONAL ENGLISH PATHWAY

Enrolled in English 43 70% Completed English 43
Enrolled in English 49 66% Completed English 49
Enrolled in English 101/105 71% Completed English 101/105

Within 4 terms 21% Complete

1,248 Students 260 Students

Source: CCCCO Basic Skills Cohort Tracker, Fall 2010 – Fall 2012 cohorts; students tracked for 3 primary terms after their initial course enrollment.
A Viz That Effectively Tells a Story (Visual by Greg Stoup)

Starting Cohort
- Purchases required textbooks
- Negotiates campus layout to locate classrooms
- Develops an educational plan
- Takes English & math assessment test
- Attends new student orientation
- Student meets with outreach professional
- Explores college website

Has a library orientation
- Enrolls in an online course
- Takes a key gatekeeper course in first term
- Joins a student club

Struggles to find parking
- Enrolls for courses next semester
- Works with math tutor
- Student struggles in first math course

Successful Completion
- Considers taking required math course
- Considers volunteering to be a student mentor
- Considers taking summer courses
- Meets with faculty during office hours
- Experiences hard financial setback
Visualizing Qualitative Data

**Strengths**
- High Quality Faculty
- Inspiring Students

**Weakness**
- Hiring Freeze
- Complex Structures

**Opportunities**
- System Migration
- Changes in Legislation
- National Economy

**Threats**
Visualizing Qualitative Data

Cuyamaca College practitioners: What they most wanted to learn at our Spring 2018 Planning and Evaluation Retreat...
**Data Visualization Tools**

- Tableau Public
- Canva
- Venngage
- Prezi
- Wordle
- Excel!
Resources & References

Stephanie Evergreen’s Data Visualization Checklist

Ann K. Emery’s Data Visualization Resources

Stephen Few’s Data Visualization Principles

NCSL Tips for Effective PowerPoints
Activity

Thinking about what you learned today...

• How has what you learned changed how you would change how you presented something in the past?

• What ideas do you have for developing a presentation that fosters a sense of urgency around completion, equity, or pathways at your college?
How a TEDx Presentation Transformed How I Prep
A Few Words of Advice

✓ Learn about the campus culture

✓ Honor the past (history) of the topic, project, stakeholders

✓ Anticipate (when possible) hidden agendas

✓ Preview your presentation with your client and other stakeholder groups
Wrap Up

1. Consider your audience
2. Identify the message: Think about the “so what”, “why” and story you want to tell
3. Keep it simple
4. Avoid unnecessary details
5. Prepare a first draft and practice with a colleague
Questions?
Contact Us

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