Info Book: Shaping MIS Data into Information

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Presenting Overview

- Introduction
- Info Book: dashboard design considerations
- Video Tutorial
- Dashboard views: live demonstration
- Technical aspects: Data structure, Tableau calculations
State Center Community College District

- Multi-College District
- Covers 5,500 sq. miles (the size of Connecticut)
- Serves over 1.7 million people in 4 counties
- Serves 22 unified and high school districts

Empowering through Educational Excellence
Info Book Dashboard Design Considerations

• Credible Data
• Simple
• Fast
• Accessible
• Informative & Comprehensive
Credible Data: numbers match CCCC0 Data Mart

Find Five Differences!
Simple – Dashboard as a Design Project

• Clean - grey to deemphasize less important (gentle formatting)
• No stack bars, no pie-charts
• Logical flow of information
• Purpose: a general audience will understand student data

“Great designers produce pleasurable experiences”
– Don Norman, author of The Design of Everyday Things
Empowering through Educational Excellence
Fast

- Initially, 1-2 min to load; now 1-2 seconds
- Dashboard design matters

Tableau recommendations:

- No silver bullet
- Don’t try to show too much at once
- Use filters, hide unused and aggregate
- Extract
- Clean data
- Strings and dates are slow, **numbers and Booleans are fast**
- Spread the data out across multiple dashboards/pages
- Use filters wisely

Reference: Best Practices for Designing Efficient Tableau Workbooks / Alan Eldridge, Tableau

Use Booleans for basic logic calculations

If you have a calculation that produces a binary result (e.g. yes/no, pass/fail, over/under) be sure to return a Boolean result rather than a string. As an example:

```
IF [Date] = TODAY() THEN “Today”
ELSE “Not Today”
END
```

This will be slow because it is using strings. A faster way to do this would be to return a Boolean:

```
[Date] = TODAY()
```

Then use aliases to rename the TRUE and FALSE results to “Today” and “Not Today”.
Accessible / Friendly

• On the IR web site – no login required
• Mobile size to view on cellphones without scrolling

Custom Size Range: 600x900 to 1100x900

Custom Size: 400x736
Accessible / Friendly

**Example:** This example shows two different bar charts. One using very little text and the other using titles and captions to add context.

Not easily accessible – Too little text

More accessible – Adding descriptive text to provide context

Informative & Comprehensive

- Drilling down to campus / location level
- Large set of variables
- Absolute numbers, percentage change, proportions
A successful Dashboard

The one that you can easily present:
within 10-20 seconds, show two-three major findings without explaining the charts

Dashboards should:
• Be a pleasure to use.
• Have interactive elements that are discoverable and predictable
• Follow a sensible, logical layout
• Have a simplified design that makes complex decisions easier

From Design’s hidden influence / Tableau
SCCCD Info Book Demo & Video Tutorial

Research & Institutional Effectiveness

Data Questions ➔ Fast Answers

- What proportion of students attend more than one campus?
- What is the total number of students by college and which college is growing at a faster pace.
  - How many international students do we have?
- How do Hispanic vs. White student Completion Rates compare to Statewide data?
- How do SCCCD students rank in overall Persistence relative to other community colleges in the state?
- What are the top degrees awarded at SCCCD colleges?
Database – Microsoft SQL Server
Joins can be done in Tableau
Parameter list

Advantages:
- Save space
- Work with multiple data sources
- Allow user data input, such target goals, etc.

1. Create parameter

2. Create calculated filed using CASE statement with the parameter
   (for large lists, use excel to auto generate the formula)
Annual or Term option

Easy switch between term and annual data. Less clicks for the user.

1. Create parameter

2. Create calculated field 1

```plaintext
CASE [p_Annual_or_Term All]
WHEN 1 THEN [Academic Year]
WHEN 2 THEN [Term]
WHEN 3 THEN [Term]
WHEN 4 THEN [Term]
WHEN 5 THEN [Term]
END
```

3. Create additional field 2 to differentiate between Summer, Fall, and Spring terms.

4. Use field 1 in the view; field 2 as a filter
Level of Detail Calculations

Add new fields, with summary data. For example, code each student by the number of campuses attended in a student-course dataset. Similar to Group_By concept.

1. Create calculated field using FIXED formula.

<table>
<thead>
<tr>
<th>SCCCD / Location</th>
<th>Count of Locations Attended</th>
<th>Fall 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>35,801 (83.1%)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>6,194 (14.4%)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>1,018 (2.4%)</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>68 (0.2%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>43,081 (100.0%)</td>
</tr>
</tbody>
</table>

Formula adjusted based on user selection of annual or term option
Stacked Views

To save space and provide multiple ways to explore data:

1. Create parameter
2. Create separate views for each of the charts
3. Create a new calculated field.
4. Use this fields a filter in each of the views with a corresponding value. For example, “Table” for Table View
5. Place all views in ‘Vertical’ dashboard object. Remove Titles.
References

• “Design’s hidden influence: What data analysts can learn from leading designers and psychologists” Tableau online
  https://www.tableau.com/learn/whitepapers/designs-hidden-influence

• Eldridge, Alan. “Best Practices for Designing Efficient Tableau Workbooks” Tableau online
  https://www.tableau.com/learn/whitepapers/designing-efficient-workbooks

• “Best Practices for Designing Accessible Views” Tableau online
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Questions?
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