

# Pair/Share

**What is your level of experience  
with Power BI or other data  
visualization tools?**

# Power BI: Tips, Considerations, and Stories

CALIFORNIA ASSOCIATION FOR INSTITUTIONAL  
RESEARCH (CAIR) 2019 CONFERENCE

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# Session Outcomes



Develop a better understanding of Mt. SAC's journey in effectively using feedback from end-users leading to improved dashboards and procedures.



Gain introductory knowledge to begin creating new measures.



Understand important tasks for 508/ADA Compliance.



Learn best practices for data security when building and sharing dashboards.

Please choose one of the Data Sets below to get started

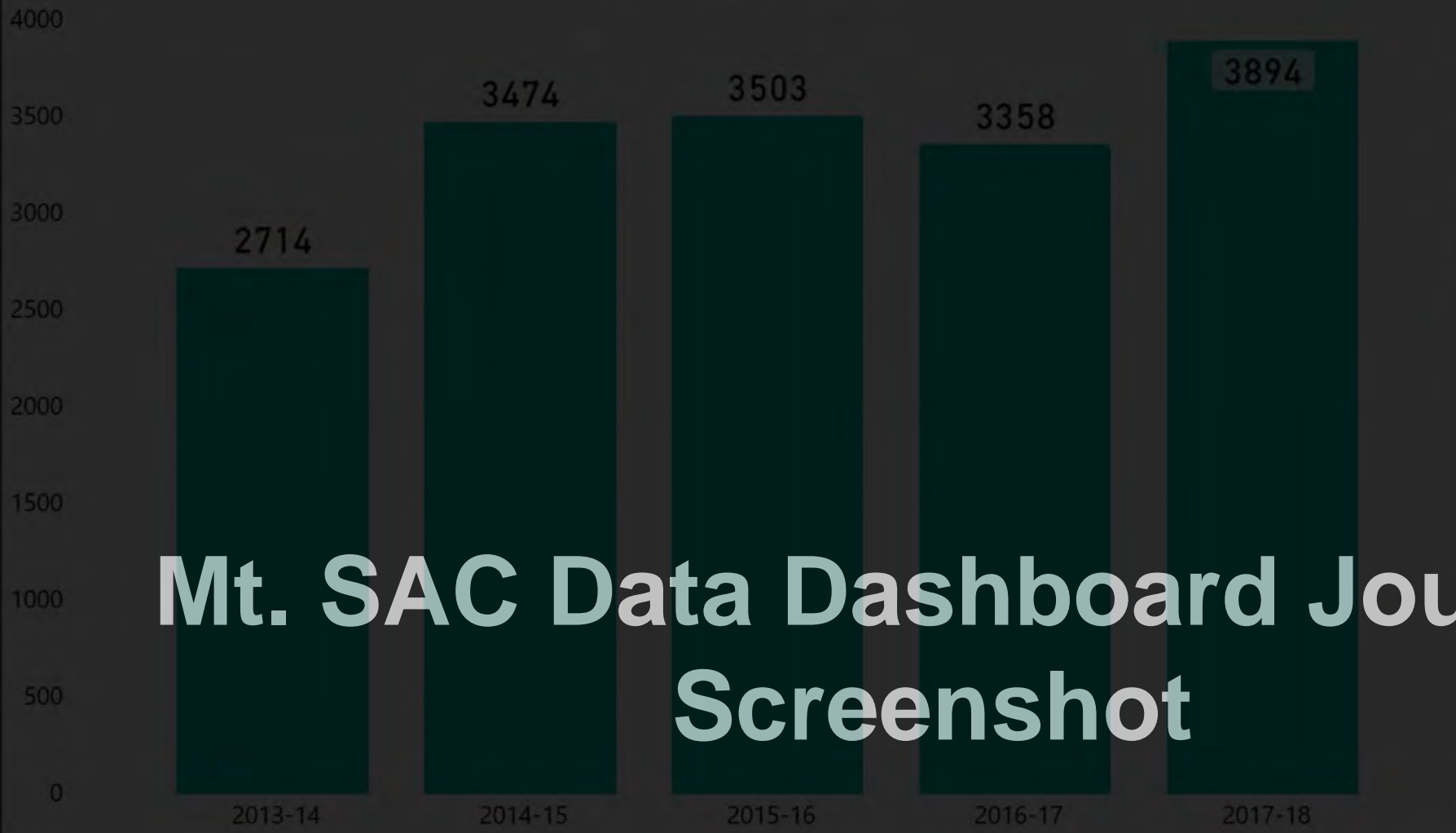
- **Educational Goals & Ed Plans**
- **Enrollment Demographics**
- **Course Enrollment**
- **Course Success**
- **Success Data by Subject**
- **Retention Data**
- **Distance Learning & Hybrid**
- **Awards**
- **Transfer Data**



## Awards by Academic Year and Degree Type

Instructions: To select multiple years or degrees, hold \*Ctrl\* and click on the desired items (\*Cmd\* for a Mac). To clear selections, click the eraser icon hidden in the upper right hand corner of each slicer or click white space in bottom edge of graphics.

Total by Academic Year



Academic Year  
All

Award Type  
All

17K  
Total

# Mt. SAC Data Dashboard Journey- Screenshot

**Mt. SAC  
Journey with  
Data  
Dashboards  
Program  
Review - Part I**

Validation process

1st round of Data Review  
Dashboards Implemented

Training sessions

# Mt. SAC Program Review Journey Part II



USER FEEDBACK

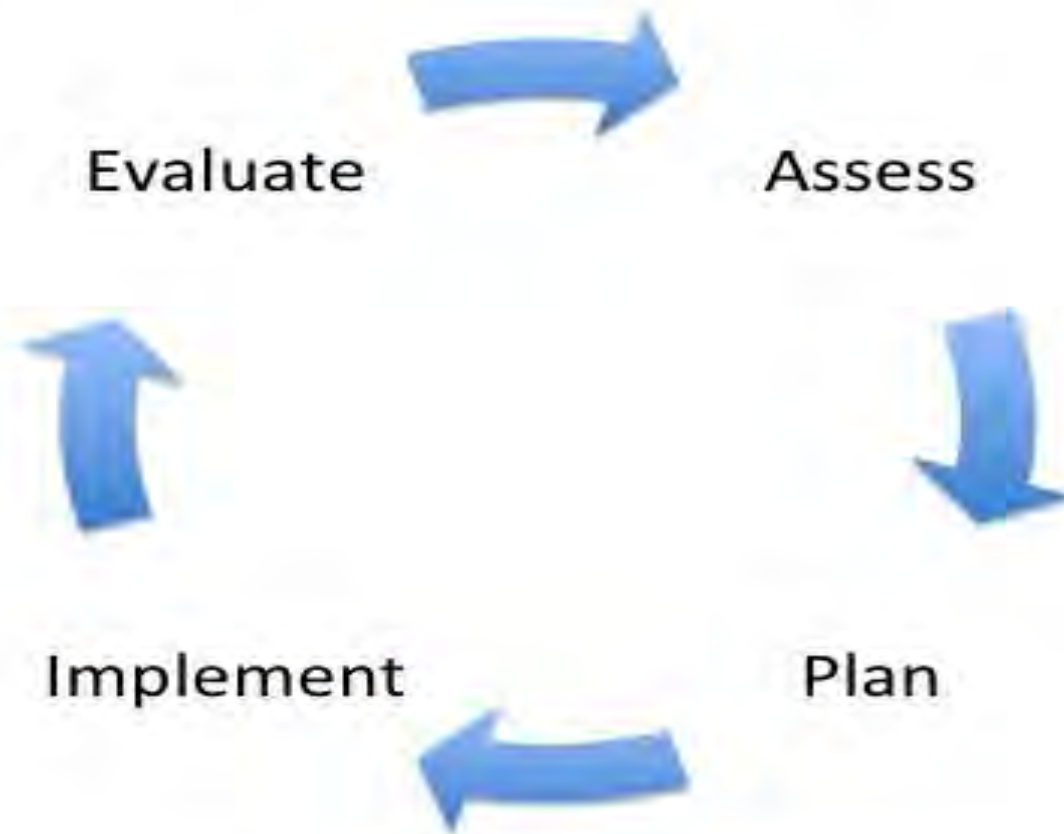


2019 SURVEY



TODAY

# Fast Feedback Loop

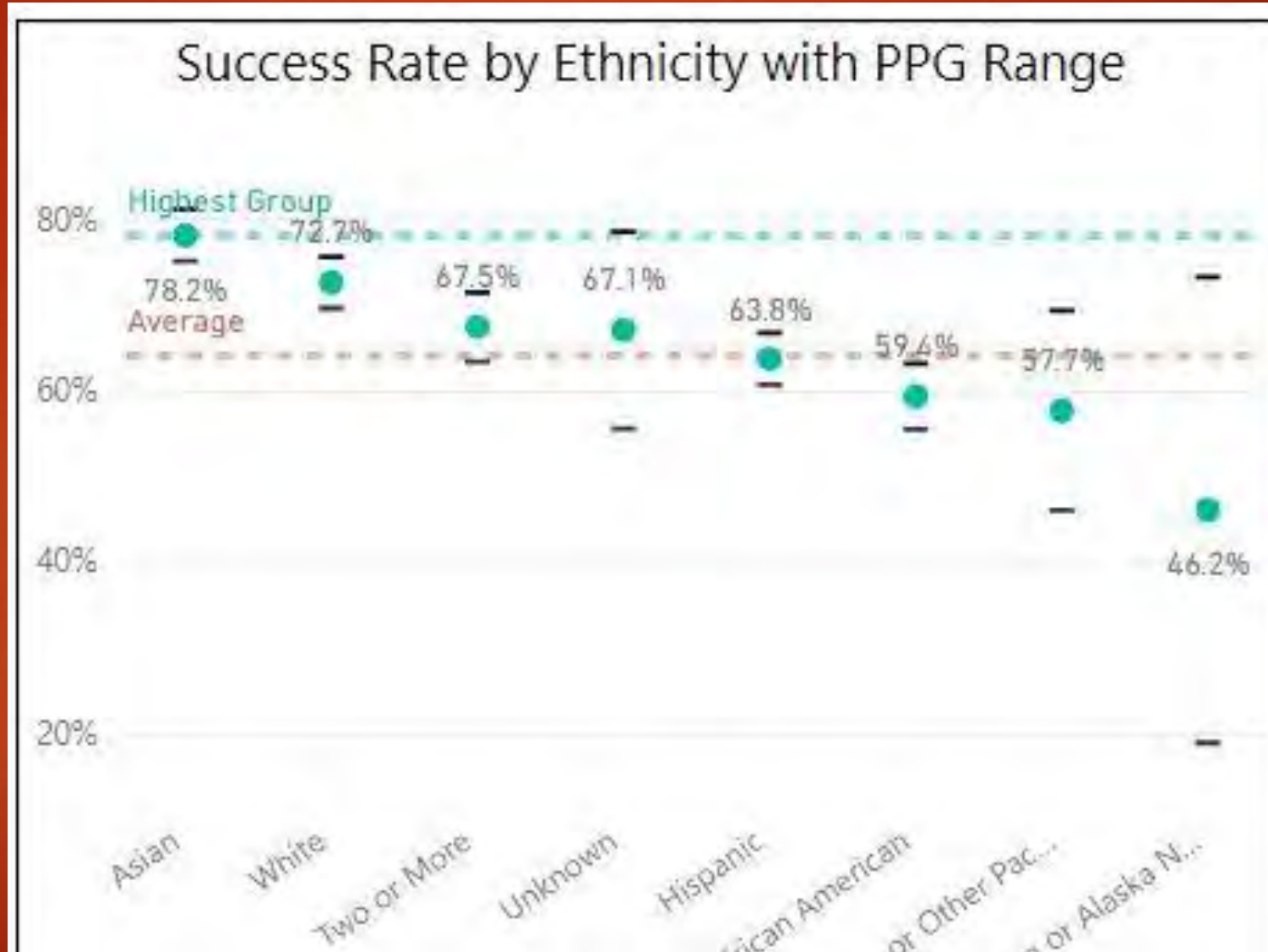




# Measures

- ▶ You CAN do it!
- ▶ Write a formula
- ▶ Why:
  - ▶ Add a measure
  - ▶ Constrain a measure (all ...)

# Add a Measure: PPG Range



# Add a Measure: New Measure

The screenshot displays a data visualization tool interface. At the top, a search bar contains the text "1 Measure =". The main area features a chart titled "Success Rate by Ethnicity with PPG Range". The chart shows success rates for various ethnicities, with a horizontal line representing the "Average" at 75.2%. The y-axis ranges from 0% to 80%. The x-axis lists ethnicities: White, Asian, Hispanic, Black or African American, and American Indian or Alaska Native. The chart also includes a legend for "Success Rate" and "PPG Low".

Below the chart is an "Ethnicity" legend with the following categories:

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic
- Native Hawaiian or Other Pacific Islander
- Two or More
- Unknown
- White

To the right of the chart are three filter sections:

- Discipline:** Select all, AD1, AD2, AD3, AD4, AD5, AD6, AD8, AD9, ADJ.
- AY:** (Blank), 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018 (selected), 2018-2019, 2019-2020, 2020-2021, 2021-2022.
- Enrolled Credit Status:** Basic Skills Not Transferable Credit - Not Degree Applicable, Not Transferable Credit-Not Degree Applicable, Transferable Credit- Degree Applicable.

On the right side of the interface, there is a "Fields" panel with a search bar and a list of measures. The "Measures\_Enrollment" section is expanded, showing the following measures:

- Enrollment
- Enrollment 1st Census
- Enrollment Total Hrs
- FTES
- Measure
- Pos Attend Hrs
- PPG
- PPG High
- PPG Low
- Retained
- Retention Rate
- Success
- Success Rate

# Add a Measure: PPG High

1 PPG High = Measures\_Enrollment[Success Rate] + Measures\_Enrollment[PPG]

Filters on this visual

- Enrollment is (All)
- Ethnicity is (All)
- PPG is (All)
- PPG High is (All)
- PPG Low is (All)
- Success Rate is (All)
- Add data fields here

Visualizations

Axis: Ethnicity

Legend: Add data fields here

Values: Success Rate, PPG Low

Fields

- Measures\_Course
- Measures\_Enrollment
  - Enrollment
  - Enrollment 1s...
  - Enrollment To...
  - FTES
  - Pos Attend Hrs
  - PPG
  - PPG High**
  - PPG Low
  - Retained
  - Retention Rate
  - Success
  - Success Rate

# Add a Measure: PPG {Messy Math}

The screenshot displays a Power BI interface with a DAX formula bar at the top and a visualization area below. The formula bar contains the following DAX expression:

$$1 \text{ PPG} = \text{MAX}\{.03, 1.96 * \text{SQRT}(0.25/\text{Measures\_Enrollment}[\text{Enrollment}])\}$$

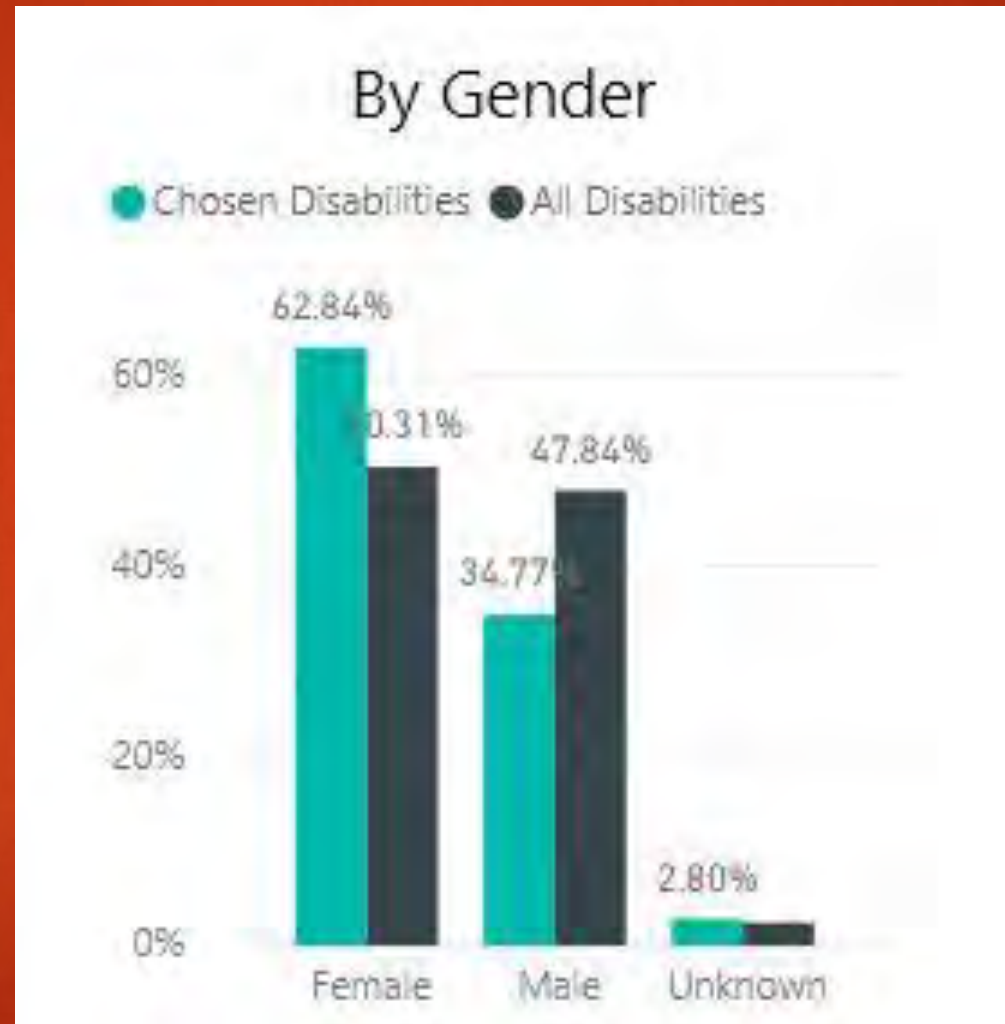
The visualization area shows a chart titled "Success Rate by Ethnicity with PPG Range". The chart is a scatter plot with data points representing different ethnic groups. The Y-axis represents the success rate, and the X-axis represents the PPG range. The data points are color-coded by year, with a legend on the right side of the chart. The legend includes the following categories:

- 2014-2015
- 2015-2016
- 2016-2017
- 2017-2018
- 2018-2019
- 2019-2020
- 2020-2021
- 2021-2022

On the right side of the interface, there is a "Filters on this visual" panel. The filters are:

- Enrollment is (All)
- Ethnicity is (All)
- PPG is (All)
- PPG High is (All)
- PPG Low

# Add a Measure: All vs Selected



# Add a Measure: All of ...

All ACCESS Students Unduplicated =

Calculate('Student-DSPS'[Student-DSPS  
Unduplicated Count],

all('Student-DSPS'[Student Primary Disability]))

# 508/ADA Compliance

- ▶ Included in Power BI:
  - ▶ Keyboard navigation
  - ▶ Show data table (alt-shift-F11)



# 508/ADA Compliance

- ▶ Screen readers state:
  - ▶ Title, visual type, alt-text
- ▶ So...
  - ▶ Give good, descriptive titles
  - ▶ Enter the alt-text

# 508/ADA Compliance: Tab Order

The screenshot displays the Microsoft Power BI interface. The top ribbon is set to 'View', with blue arrows pointing to the 'View' tab and the 'Snap Objects to Grid' checkbox. The 'Selection' pane on the right is open, showing a list of visual elements. The 'Tab order' option is selected and highlighted with a yellow underline, with a blue arrow pointing to it. The list of elements in the Selection pane is as follows:

Order	Element
1	Success Rate by Eth...
2	Slicer
3	Slicer
4	Slicer
5	Slicer

The main workspace shows a map visualization titled 'Success Rate by Ethnicity with POC Points'. The 'Filters' pane on the right shows 'Enrolled Credit Status is (All)'. The 'Filters on this page' and 'Filters on all pages' panes are also visible, each containing an 'Add data fields here' button.

# 508/ADA Compliance: Contrast

- ▶ Can you read this?
- ▶ Can you read this?
- ▶ How about this?

# 508/ADA Compliance: Links

- ▶ Color Contrast:
  - ▶ [accessible-colors.com/](http://accessible-colors.com/) (gives suggestions)
  - ▶ [webaim.org/resources/contrastchecker/](http://webaim.org/resources/contrastchecker/)
  - ▶ [websemantics.uk/tools/wcag-colour-contrast-checker/](http://websemantics.uk/tools/wcag-colour-contrast-checker/)
  - ▶ [www.rapidtables.com/convert/number/decimal-to-hex.html](http://www.rapidtables.com/convert/number/decimal-to-hex.html) (If you need to convert from RGB to/from hex)
- ▶ Color Blind Checking:
- ▶ Browser Add Ons
  - ▶ Chrome: [colorblinding](#)
  - ▶ Firefox: [Let's get color blind](#)
- ▶ Check documents:
  - ▶ coblis: [www.color-blindness.com/coblis-color-blindness-simulator/](http://www.color-blindness.com/coblis-color-blindness-simulator/) (image files only)
  - ▶ [www.toptal.com/designers/colorfilter/](http://www.toptal.com/designers/colorfilter/) (works on webpages)

# Color Contrast

ACCESSIBLE COLORS 258 0

My text color is `#987654` at `18 px` and `regular` weight

My background color is `#123456`

My design must be `AA` compliant

<p><b>Fails AA</b></p> <p>Required contrast ratio: 4.5</p> <p>Your contrast ratio: 3.06</p> <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...</p>	<p><b>Passes AA</b></p> <p>if you change background color to <code>#071320</code></p> <p>New contrast ratio: 4.5</p> <p>or</p> <p>if you change text color to <code>#B39576</code></p> <p>New contrast ratio: 4.53</p> <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...</p>	<p><b>Passes AA</b></p> <p>if you change text color to <code>#B39576</code></p> <p>New contrast ratio: 4.53</p> <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...</p>
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# 508/ADA Compliance: Credits

- ▶ A lot of the ADA information came from the presentation:

Microsoft Power BI: Creating accessible Power BI reports

By Meagan Longoria and Tessa Hurr

MBAS Gallery: BRK2036

[community.powerbi.com/t5/MBAS-Gallery/Microsoft-Power-BI-Creating-accessible-Power-BI-reports/td-p/712528](https://community.powerbi.com/t5/MBAS-Gallery/Microsoft-Power-BI-Creating-accessible-Power-BI-reports/td-p/712528)

# FERPA and Data Security







Planning for Institutional Effectiveness

Credit - Data Review

Noncredit - Data Review

PIE Planning and Resources

Improving the Planning Process

Office of Instruction

Outcomes Assessment

Strategic Planning

Institutional Set Standards

Outcomes Reports

Recent

Subsites

Recycle Bin

[Go to Previous Metric - Course Success](#)

[Go to Next Metric - Retention Data](#)

To use the data reports, click on the tab of the report you want to analyze. Then click on the green plus sign in the right side Actionpoint area.

There you can add your analysis of progress and how your area will address the data through planning.

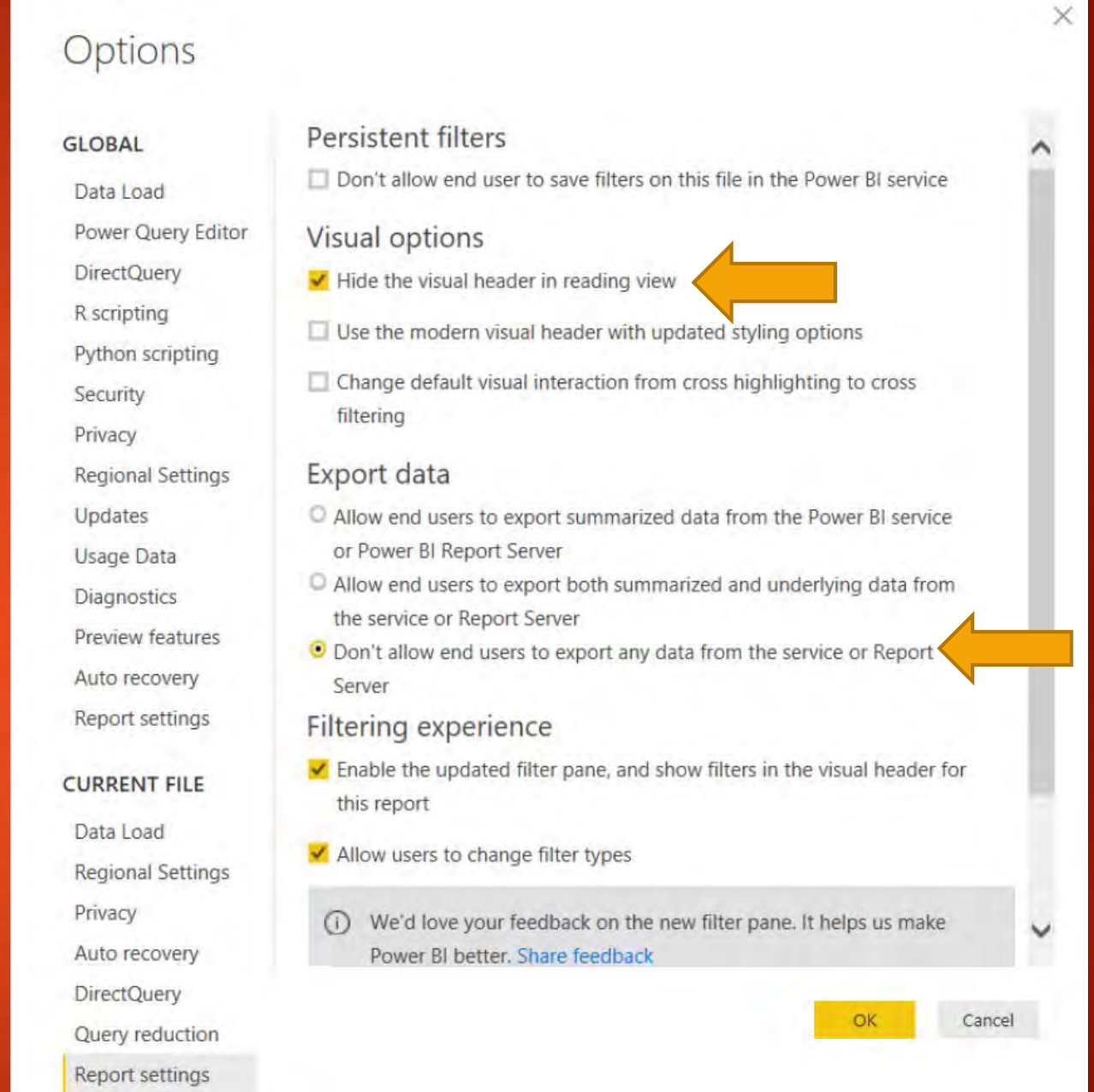
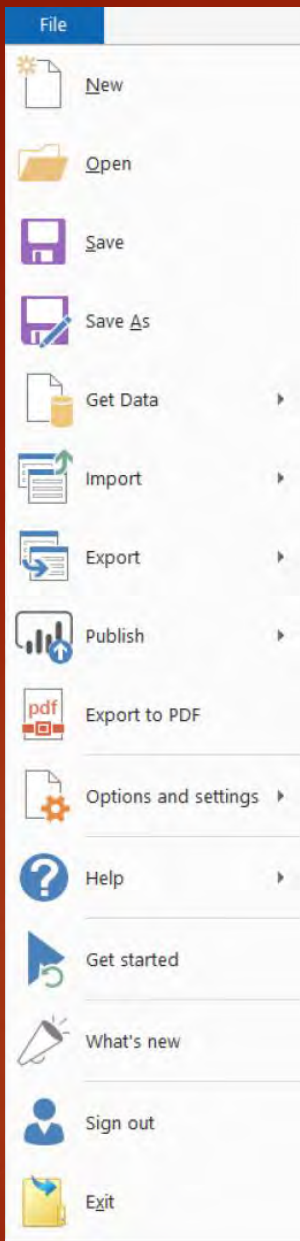
Clicking the camera icon, will provide options to add a screen shot of the data or upload a document.

Share your reports and dashboards internally





**Restrict end users to download data  
from reports/dashboards**





# Power BI & Data Security (8/5/2019)

## Aaron Voelcker and Katy Wilson

**Link:**

<https://cccconfer.zoom.us/recording/play/spZZQOBe9NnjFV13eiUkkj8n1rHaHfrqLXtB3B13ISVKI83IIMvyJype30IzuvU1?continueMode=true>

# Connecting the Dots...



Develop a better understanding of Mt. SAC's journey in effectively using feedback from end-users leading to improved dashboards and procedures.



Gain introductory knowledge to begin creating new measures.



Understand important tasks for 508/ADA Compliance.



Learn best practices for data security when building and sharing dashboards.

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# Questions

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