# Data Dashboard Design & Build on a Budget

Veronica Smith, Principal
AEA Coffee Break Webinar
February 23, 2012

Data Dashboard Definition

Visual display of the most important information needed to achieve one or more objectives consolidated on a single screen (or page) so it can be monitored and understood at a glance.
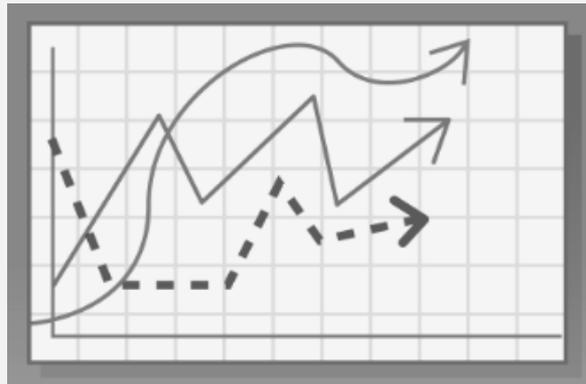
Common Visualizations

Bar graphs

Funded Pilot Projects (▬ Actual; | Target)

Year 5 Target %: 37.5

Year 2 (YTD)

Year 1

Grant Funding to Date

Awarded $7.0
Requested $15.3

Millions

Line graphs

Female Enrollment Percentage in All Courses

34.6% 42.9% 52.6% 50.0% 46.6% 35.3%

Average Baseline Sp06 F06 Sp07 F07 | Average Spring 2008 | Average Summer 2008 | Average Fall 2008 | Average Spring 2009 | Summer 2009
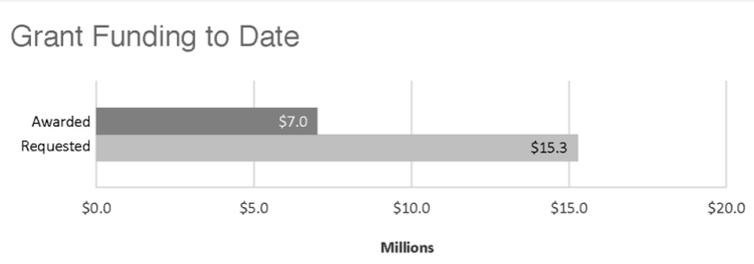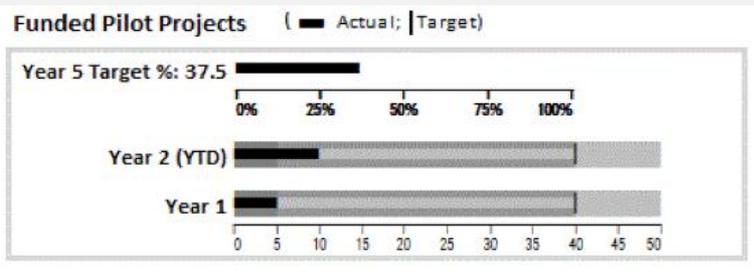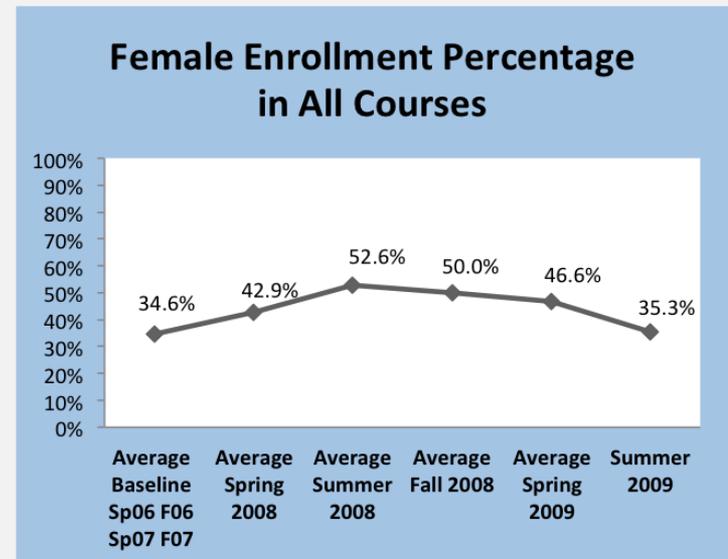
Evaluation & Monitoring Process
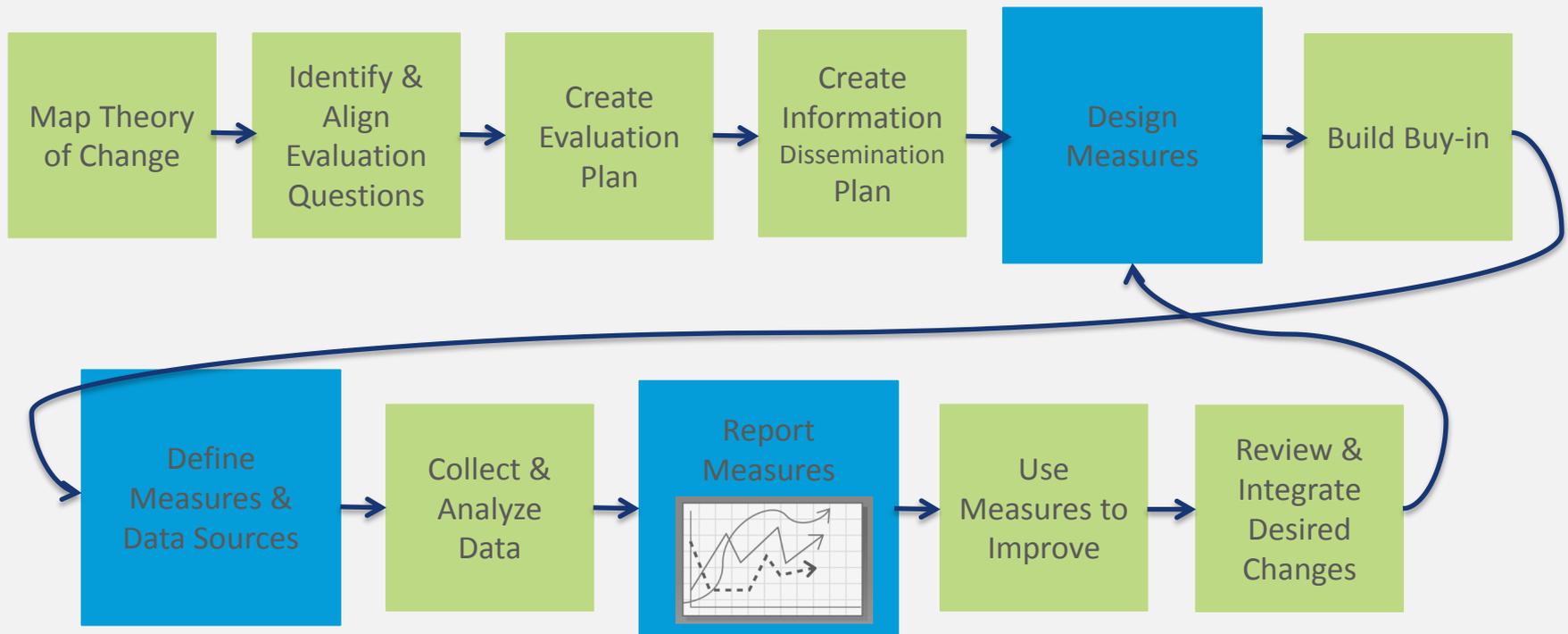
Design Measures

measure design

begin with the end in mind	• Increase DADS clients' parenting skills and child development knowledge
be sensory specific	• Client is using the skills taught in the parenting course • Children, mentors, spouses and partners observe client using parenting skills • Client demonstrate higher level of child development knowledge on pre-test post-test taken at parenting course • Client demonstrates sustained level of child development knowledge at 6 months and a year after taking the parenting course • Client creates and implements parenting plan

find potential measures	potential measures	Strength	Feasible
	1. Change in child development knowledge test performance after completion of parenting skills course	H	H
	2. Reports of client using key parenting skills at 3, 6 and 12 months after attending course	H	L?
	3. Child development knowledge test at 6 and 12 months after attending course	H	M
	4. Parenting skills client survey at 6 and 12 months after attending course	M	M
	5. Parenting plan completion record	M	H
	6. Parenting plan implementation review at 6 and 12 months	H	M
	7.		

| check the bigger picture | • If clients feel like they are being judged, they may avoid coming to DADS to avoid taking the follow up test and survey. We will want to emphasize that this information is being gathered to help clients AND DADS to learn and grow.

• We will need to look into how we can get observations from children, spouses |

Define Measures & Data Sources

measure definition

name	Family Participation Rate
description	Percentage of program participants in learning intervention programs who had at least one family member participating in Family Literacy Nights, Motheread Activities and Home Literacy Programs
intent	To measure engagement by our students' families. This is a family/community Engagement measure.

calculation	*formula:*	[# of students whose family member participated in given literacy programming event / # of students in program(s) served by event]
	frequency:	monthly

scope:	# of students whose family member participated in literacy programming event relates to Family Literacy Nights, Motheread Activities and Home Literacy Programs # of students in program(s) served by event relates to program enrolment across Powerful Schools

data items:	*data item name*	*description*	*source/availability*
	Num_familymember_participate	Number of PS participatns who had family member participate in literacy programs	Manual query from event(s) participant sign up sheet/survey
	Num_students_served	Number of students served by given event(s)	Manual query from program enrolment data

presentation	comparison type:	Trend over time
	presentation method:	Dashboard
	frequency:	Quarterly
response	Establish acceptable range of Parent/Guardian Attendance Rate If performance falls below acceptable range, identify causes and initiate an improvement project	
owner(s)	performance owner(s)	
	data owner(s)	
notes	For aggregation per time period calculate the total number of students served across all programs and the total number of students who had a family member attending all those programs to get percentage rate. (Don't average participation rate across programs).	
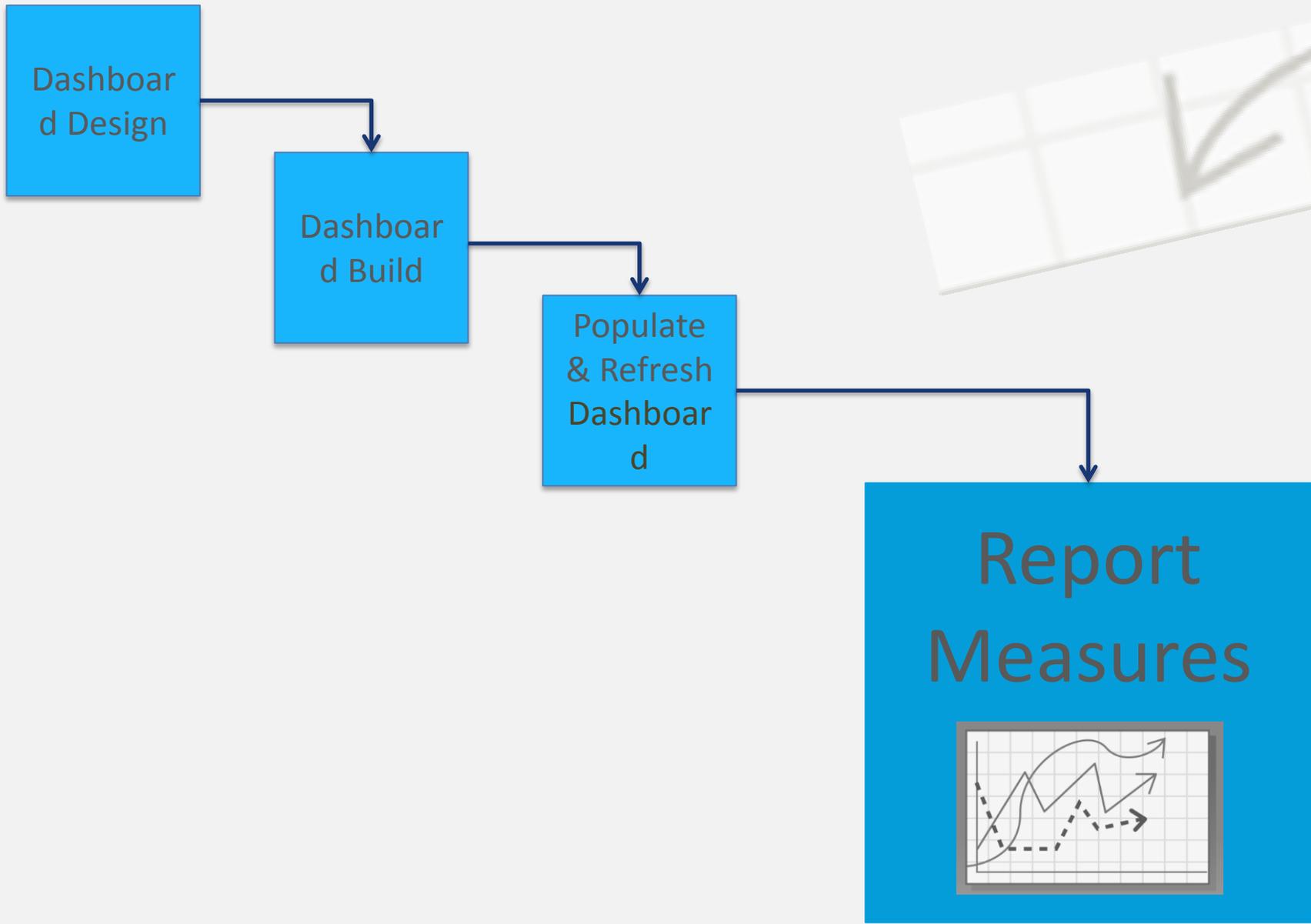
```
┌─────────────┐
│ Dashboard   │
│ Design      │──┐
└─────────────┘  │
                 ▼
          ┌─────────────┐
          │ Dashboard   │
          │ Build       │──┐
          └─────────────┘  │
                           ▼
                  ┌─────────────┐
                  │ Populate    │
                  │ & Refresh   │──────────┐
                  │ Dashboard   │          │
                  └─────────────┘          ▼
                                   ┌─────────────────┐
                                   │                 │
                                   │     Report      │
                                   │    Measures     │
                                   │                 │
                                   └─────────────────┘
```

Design

Build

Courses			Career Stage	
Name	Inc?	Quarter Delivered	# Investigator	# Trainee
Total:	1	1	3	
Current Dashboard:	1	1	3	
The Best Workshop Eve	Y	2010 Fall	3	

Populate & Refresh

GHUCCTS Organization & Governance Indicators for 2011 Q3

Key Indicators

Actual ▮ Target |

Actual vs. Target	Value
● Grants Submitted	5
Grants Funded	4
Manuscripts Submitted	3
Publications	1
● Presentations	4
Products	3
Seminars	1
Courses	1

(scale: 0 5 10 15 20 25 30)
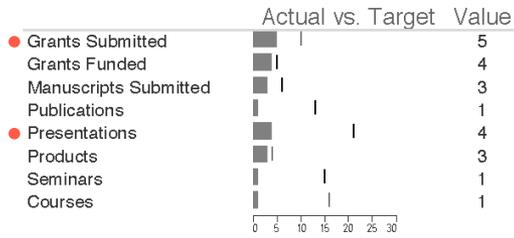
Scholarship

Grant Funding To Date

Awarded	$4.3
Requested	$6.8

(scale: $0.0 $2.0 $4.0 $6.0 $8.0 — Millions)
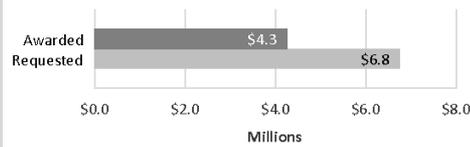
Grant Collaboration
Funded Grants

	GT	HU	MedS	Wva	ORNL	OCTSA	OI	# Institutions per Grant
GHI							✓	1
KLM		✓		✓		✓		3
A longer name goes here	✓			✓		✓		3
Everybody's name	✓		✓					2
# Grants per Institution	2	1	1	2		2	1	9

Actual ▮ Target |

Primary Research Focus	Value
● Basic	0
Clinical/Patient-Oriented	1
Community-based	1
Health Services	0
Policy	1
Public/Population Health	0
Other	0

(scale: 0 2 4 6 8 10)

Products Developed	Value
Tools/Databases	1
Licenses	1
Patents	1
Implemented Protocols	0
Other	0

(scale: 0 5 10 15 20)

Education & Training

Technical Assistance

— Requested ▬ Served

(line chart, scale 0–60, years 2010–2015)

Degree Programs

Actual ▮ Target |

Students Enrolled	Value
● Investigator	12
Trainee	10
Scholar	8
Other	2

(scale: 0 10 20 30 40)

Students Completed	Value
● Investigator	11
Trainee	9
Scholar	7
Other	1

(scale: 0 10 20 30 40)

Certificate Programs

Students Enrolled	Value
Investigator	4
Trainee	4
Scholar	1
Other	1

(scale: 0 10 20 30 40)

Students Completed	Value
Investigator	4
Trainee	4
Scholar	1
Other	1

(scale: 0 10 20 30 40)
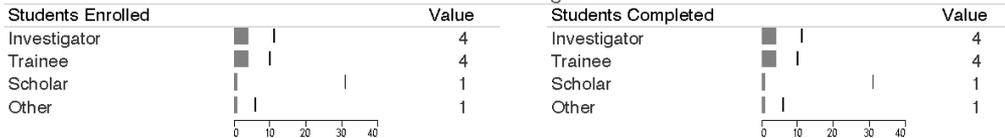
Outreach

Website Traffic

Home Page	History Since Y1 Q1	Hits to Date
GHUCCTS		425
BI		231
CER		246
PCIR		223
PCSP		142
REKS		84
RETCD		134
NTM		265
TTR		282
TE		89
CRU		123
SEPCOM		83

Notes/Comments:
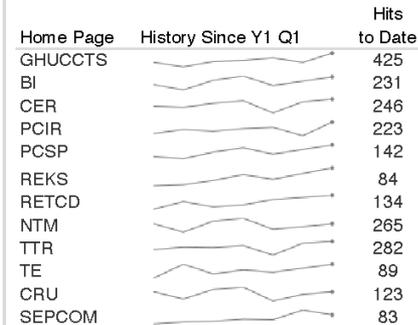
Average LGBTQ History & Leadership POST test Scores

Category	
Leadership Characteristics	
Personal Values	
Define Leadership	
Leadership Ability	
Personal & Positional Power	
LBGTQ History	

Average 5.3

Rating: 1, 2, 3, 4, 5, 6
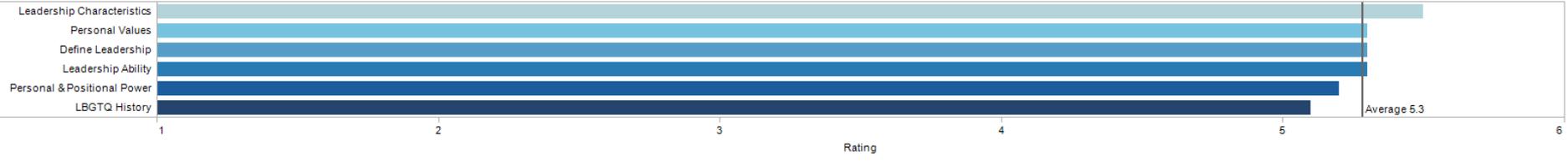
Average LGBTQ History & Leadership PRE test Scores

Category	
Leadership Characteristics (..	
Personal Values (PRE)	
Define Leadership (PRE)	
Leadership Ability (PRE)	
Personal & Positional Power..	
Avg. PREHisUnderstand	

Average 4.1

Rating: 1, 2, 3, 4, 5, 6
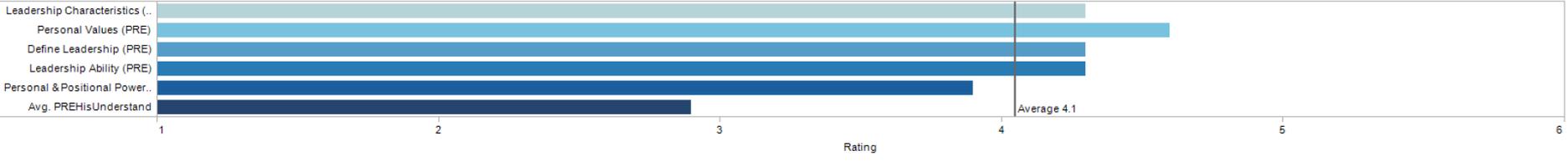
Pre-post Change in LGBTQ History & Leadership Skill and Knowledge

ID: 2, 3, 4, 5, 9, 10, 11, 12, 13, 14

Leadership Characteristics	Personal Values	Define Leadership	Leadership Ability	Personal & Positional Power	LGBTQ History
Average 1.2	Average 0.7	Average 1.0	Average 1.0	Average 1.3	Average 2.2
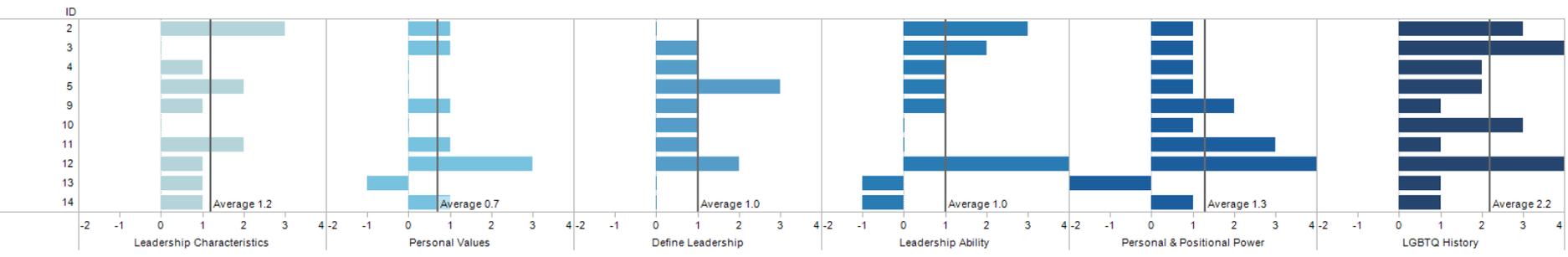
Exploring Student Data

Analysis of College GPA by Hometown
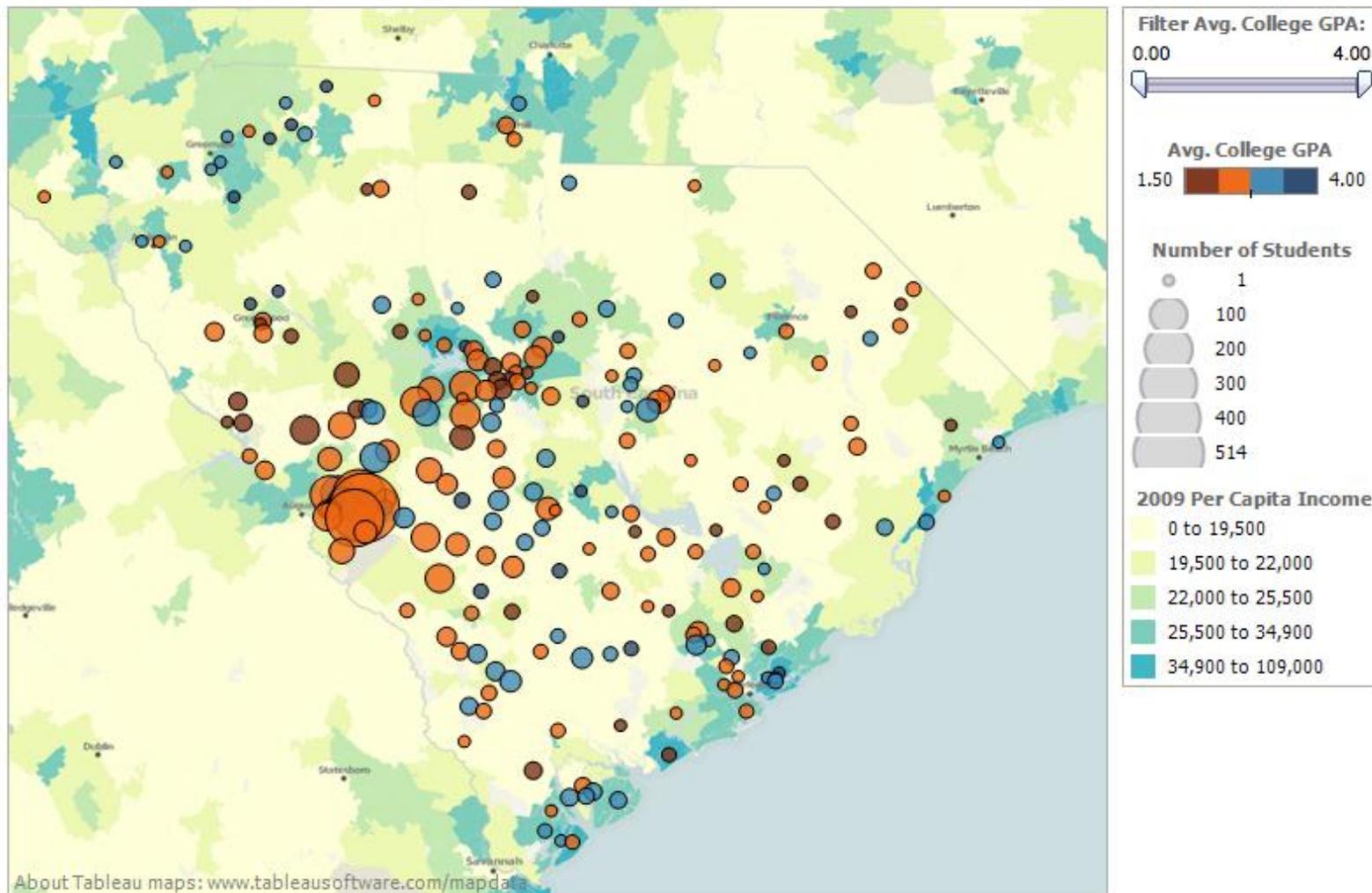
Most students come from Columbia and its suburbs.

Dashboard Review

- Can you evaluate what is going on?
- Is it easy to spot the areas that need attention?
- Does it provide context?
- Does the organization of the data make sense?
- How does the dashboard support better monitoring and decision making?

1: **Dashboards cost money**

Design-build-populate cost range: $5-$50K

Example 1

Excel/tableau dashboard design-build-populate + refresh protocol + half-day training = $8-$10K (includes 10 hrs measure design & definition consult)

Example 2

Dashboard design-build + database backend = $30-$50K (consider IBM Cognos)

2: Dashboards require design, build & populate phases

3: Dashboards are part of a multiple-phase continuous improvement process
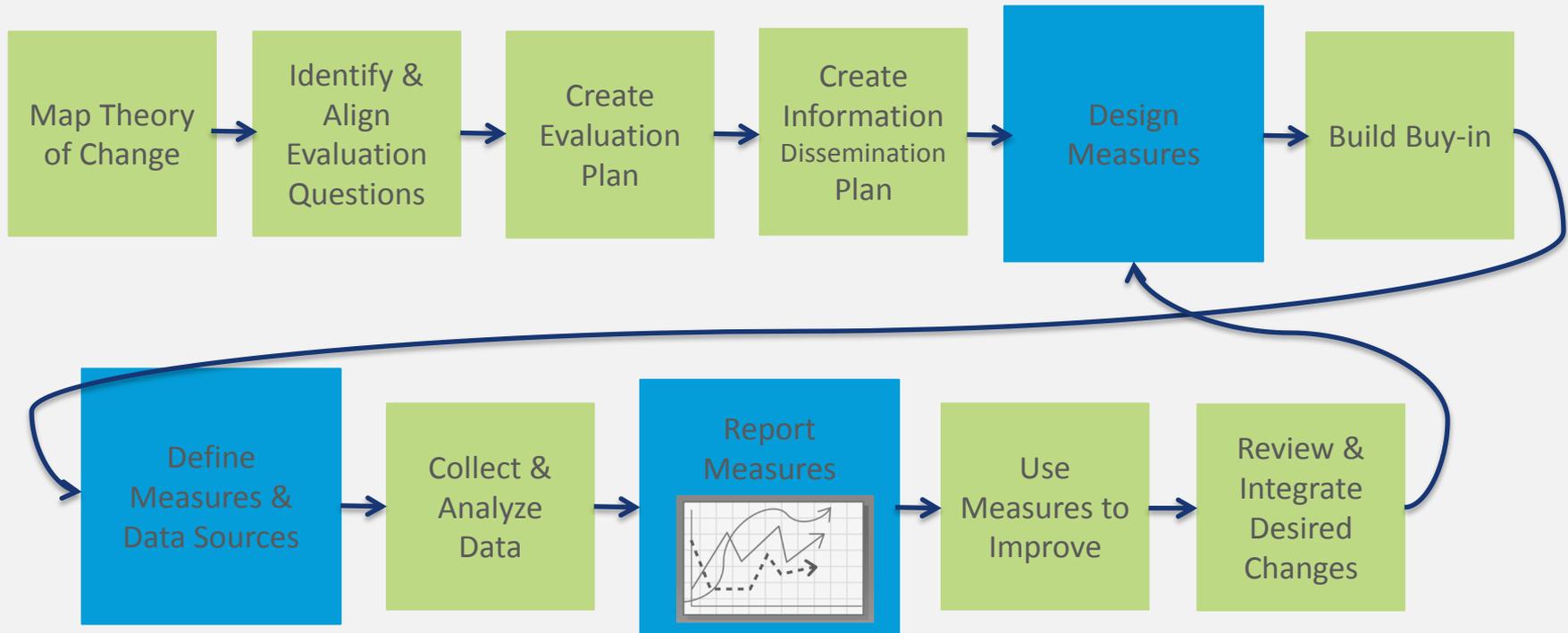
4: Dashboards can be a valuable tool in your evaluation & monitoring kit
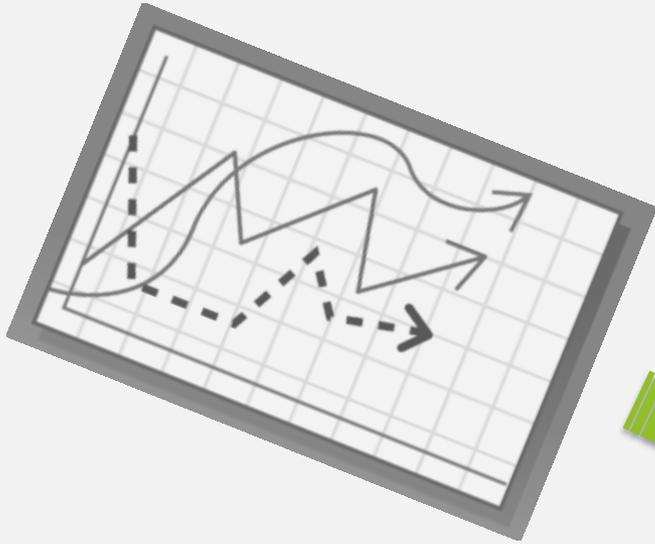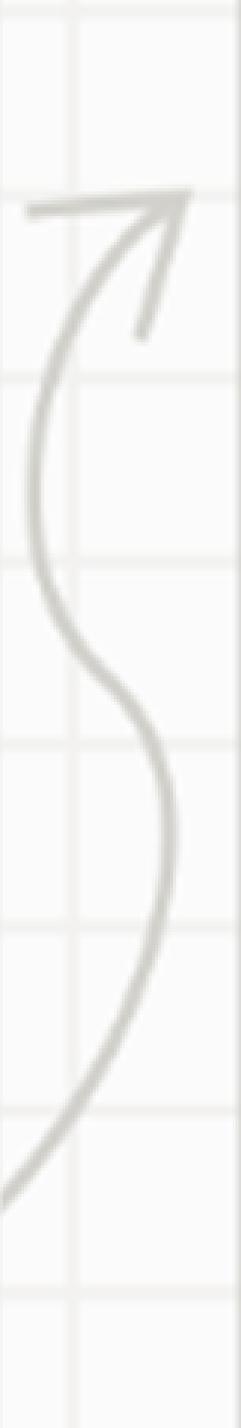
Thank you

veronicasmith@data2insight.com

data2insight

LinkedIn

data2insight on twitter

Valuable Links

- [perceptual edge](#)
- [excel user](#)
- [chandoo.org](#)
- [complex diagrams](#)
- [tableau software gallery](#)
- [Bonavista Systems](#)
- [Freakalytics](#)
- [IBM cognos](#)
- [stacey barr, performance measure specialist](#)