



ADVANCED DATA

Data-Driven Decision Making

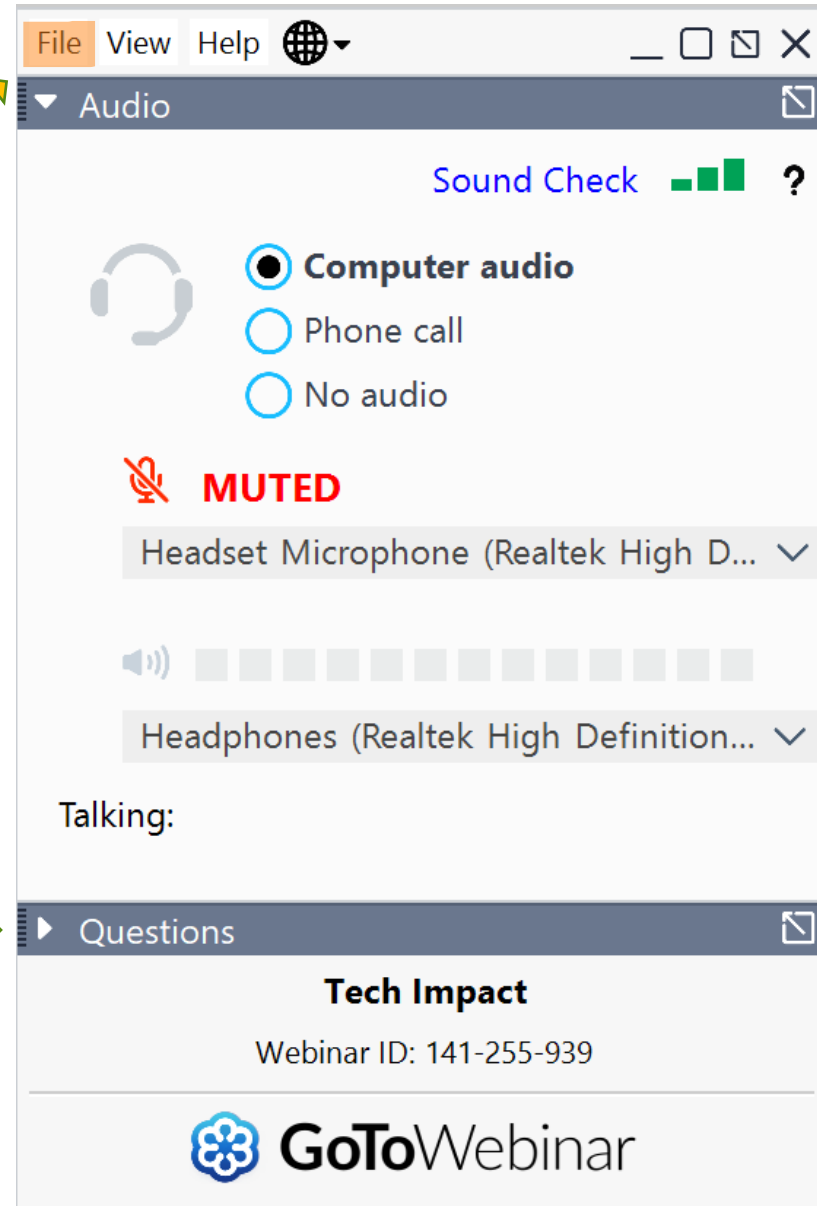


GOTOWEBINAR INTERFACE

If you cannot hear us speaking, go to:
File->Preference->Audio and check
your audio settings.

Type all comments/questions into the
"Questions" panel.

Your interface may display slightly differently.



The screenshot displays the GoToWebinar interface. At the top, there is a menu bar with 'File', 'View', and 'Help' options. Below the menu bar, the 'Audio' panel is visible, featuring a 'Sound Check' indicator with a green bar and a question mark. The audio settings are set to 'Computer audio', with options for 'Phone call' and 'No audio'. A red microphone icon with a slash through it indicates that the audio is 'MUTED'. Below this, there are two dropdown menus for selecting audio devices: 'Headset Microphone (Realtek High D...' and 'Headphones (Realtek High Definition...'. A 'Talking:' indicator is present below the device selection. At the bottom of the interface, the 'Questions' panel is visible, showing the webinar title 'Tech Impact' and the 'Webinar ID: 141-255-939'. The GoToWebinar logo is displayed at the bottom right of the interface.

Course Page:

<https://offers.techimpact.org/course-page-advanced-data>



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Course Page

Course Page - Advanced Data

Please bookmark this Course Page. It will be consistently updated with the information you need to access the webinars, slide decks, and recordings.

Thank you for joining us for this course.

Important Information:

- GoTo Webinar is our webinar platform. You will receive email reminders with login information for each session, or you can find the links on this page.
- **Every session will be recorded and available to individuals who have registered for the course.**
- Add training@techimpact.org to your contacts to ensure meeting details do not get caught in your spam folder.

Session 1:

You can access the webinar [here](#).

After the session, you can view a recording of the session [here](#).

After the session, you can download the slides for the seminar [here](#).

Accidental Techie Schedule

This course takes place over three sessions on the following dates:

- **Thursday, November 5, 1-2:30 PM EST**
- **Thursday, November 12, 1-2:30 PM EST**
- **Thursday, November 19, 1-2:30 PM EST**



ERICA BLAKE

Senior Consultant, Tech Impact

Pronouns: She/Her

I work with nonprofits to assess data needs, identify and implement data solutions. My background includes working with housing and social service organizations use data for program improvement.



ANDREW MEANS

Senior Director of Global Impact Data Strategy, Salesforce.org

I help customers use their data and technology to drive greater impact. I am a co-founder and board director at BrightHive, a data collaboration platform, and am Chairman of the Board at 10K Windows, a workforce development nonprofit helping victims of trafficking and gender-based violence achieve safe and sustainable employment.

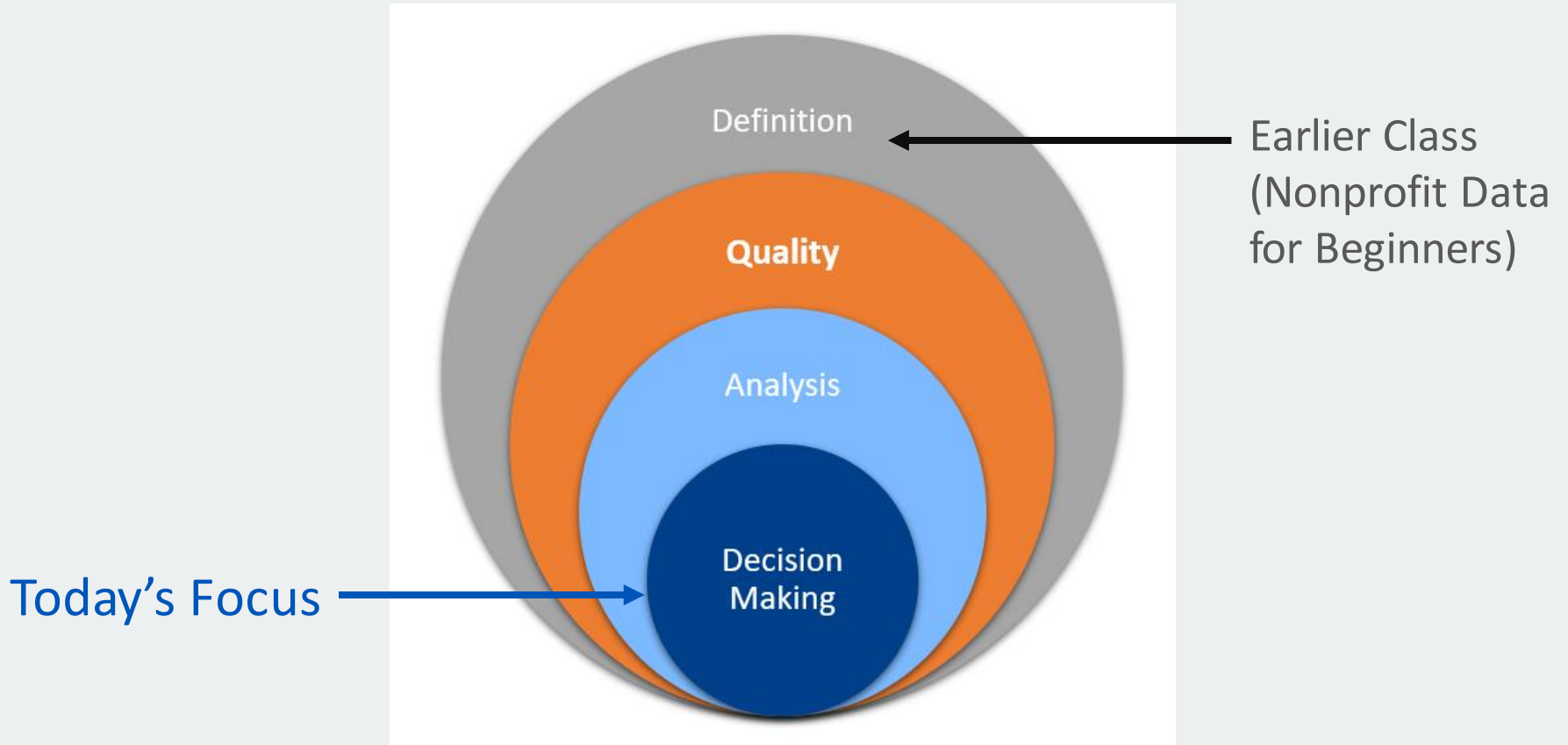
AGENDA

1. Course Session and Goals
2. Outputs and Outcomes: What Did We Do, What Are the Results?
3. What Does Your Data Mean?
4. Planning: What Should We Do Next?
5. Using Data to Look Back, Look Now, and Look Forward



COURSE SESSION & GOALS

ADVANCED DATA COURSE SESSIONS



Session 1: Data Quality

Session 2: Data Analysis/Visualization

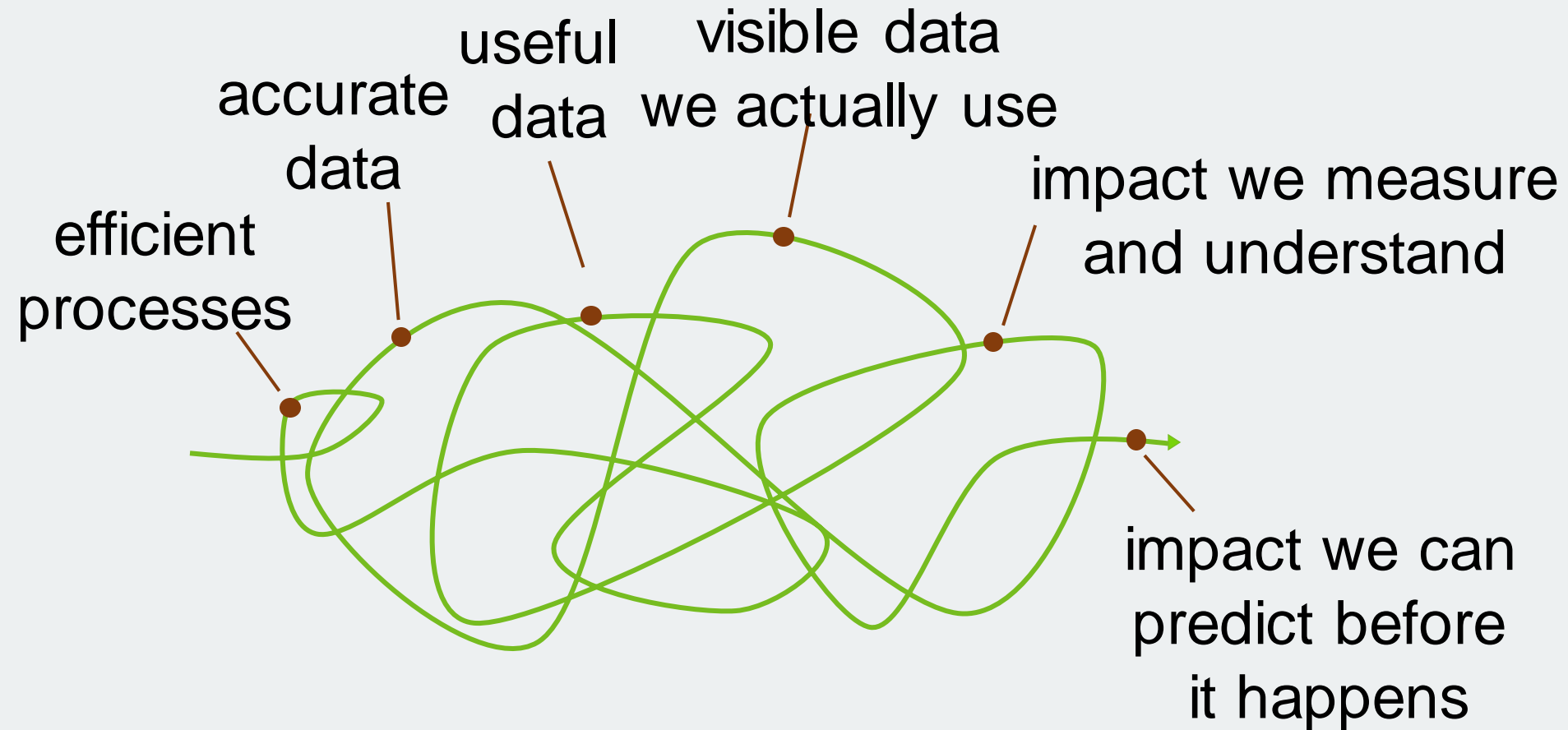
Session 3: Data Driven Decision Making

LEARNING GOALS FOR SESSION 3

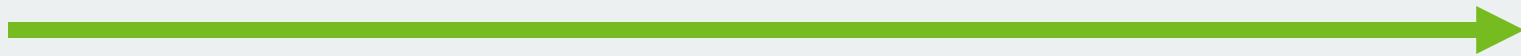
- Reflect on your data's meaning.
- Make plans to use your data!



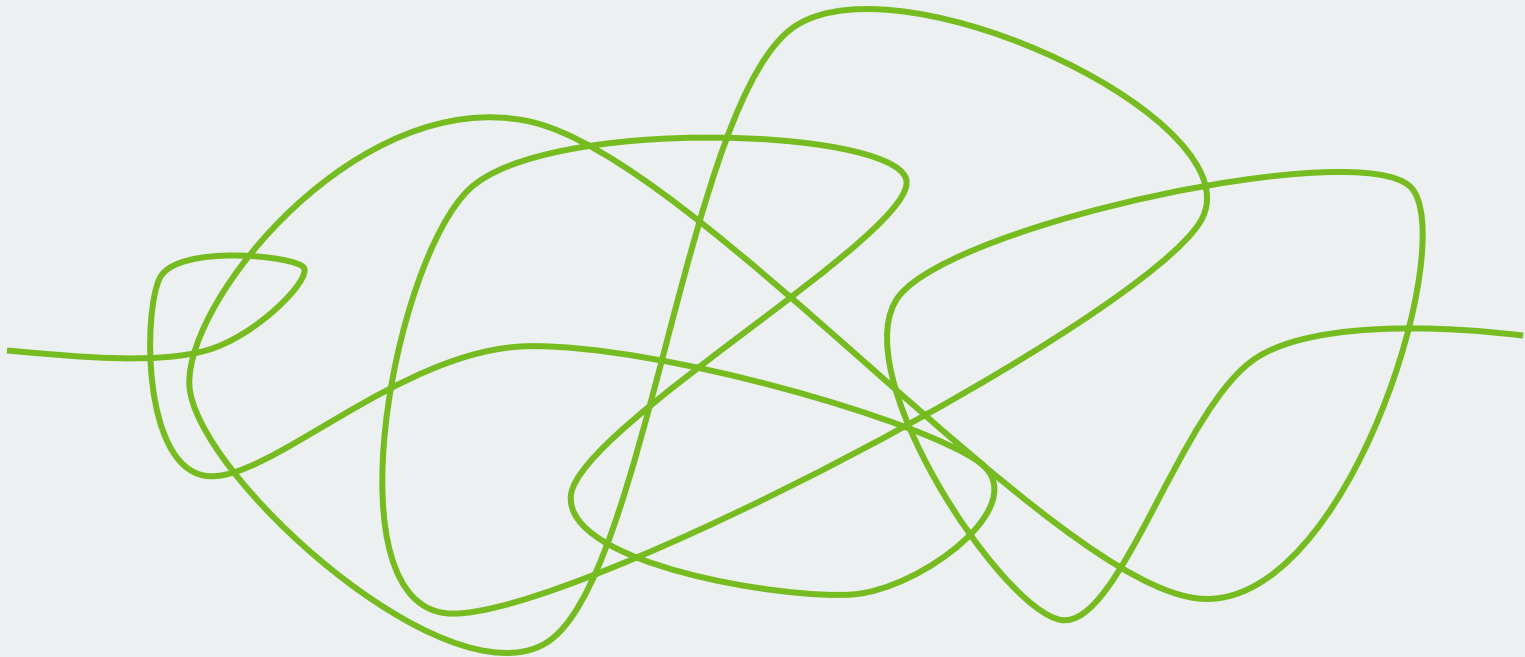
STAGES OF DATA USE



AIM FOR PROGRESS, NOT PERFECTION



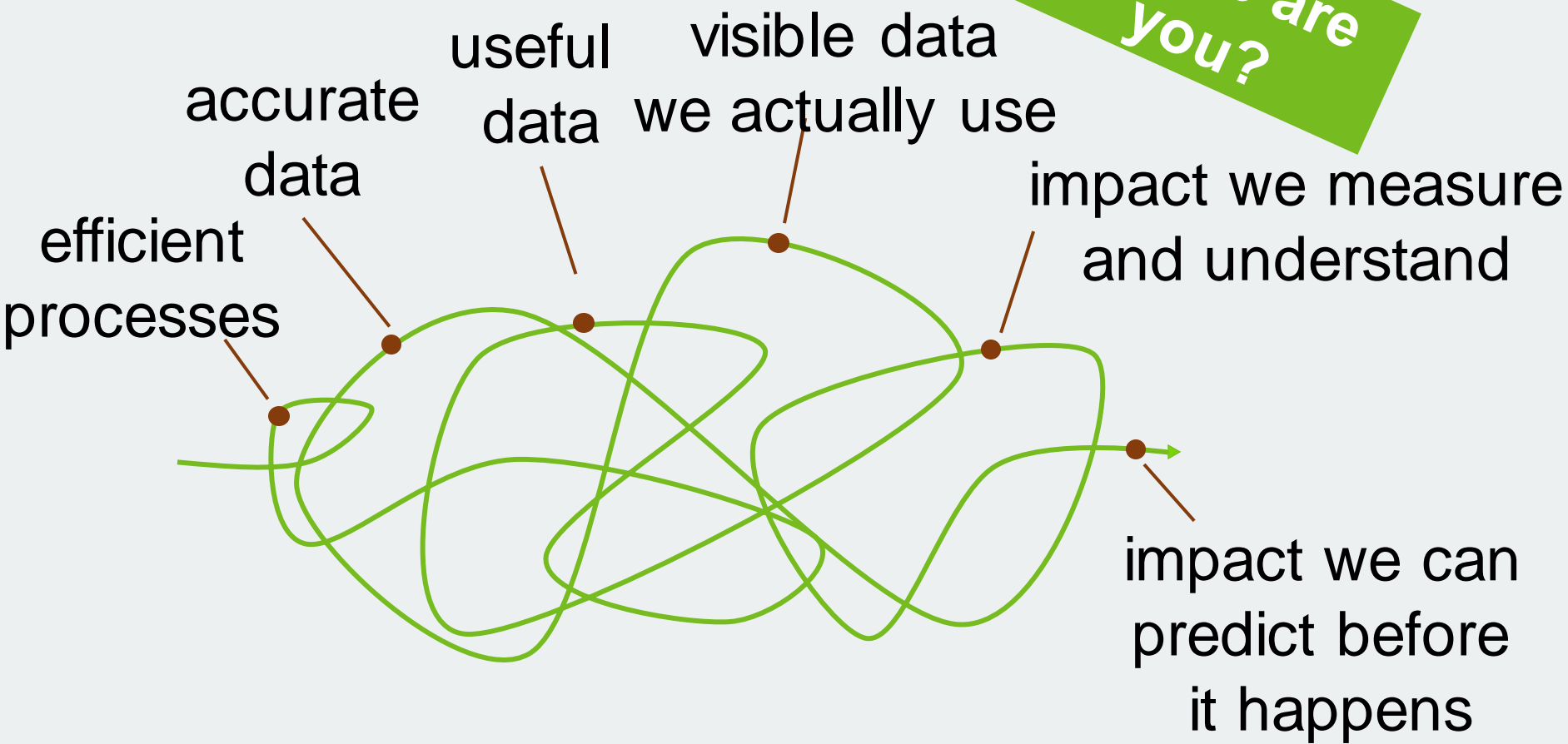
How we want change to work



How it does work

STAGES OF DATA USE

where are you?





REVIEW HOMEWORK

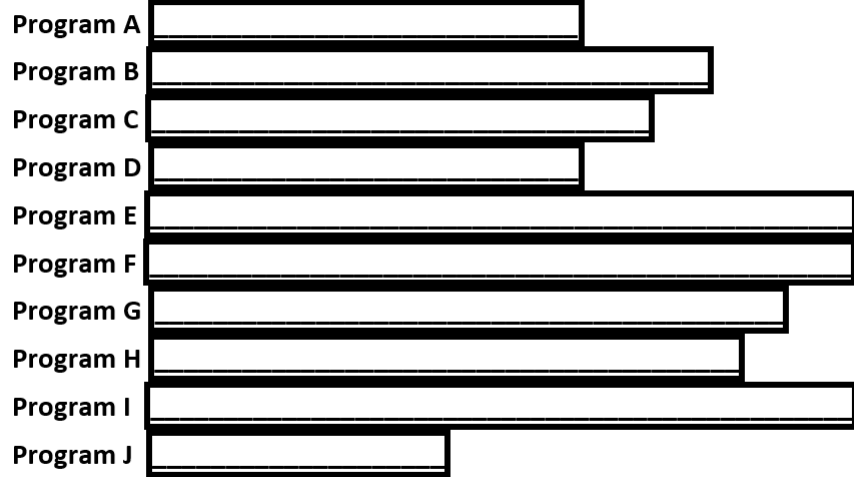
Audience: Board Members, Funders and Clients – Informative

Purpose: Assess Client Satisfaction Results from Annual Survey

Key Metrics: Satisfaction by Program, Satisfaction by Domain, Satisfaction by Question

Client Satisfaction by Program

(Bar Graph)

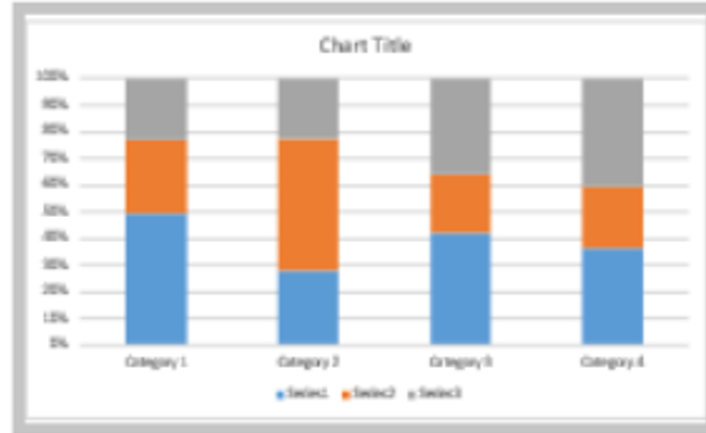


Satisfied Clients

From Survey Data Excel file

Client Satisfaction by Domain

(Stacked Bar Graph)



Domain 1

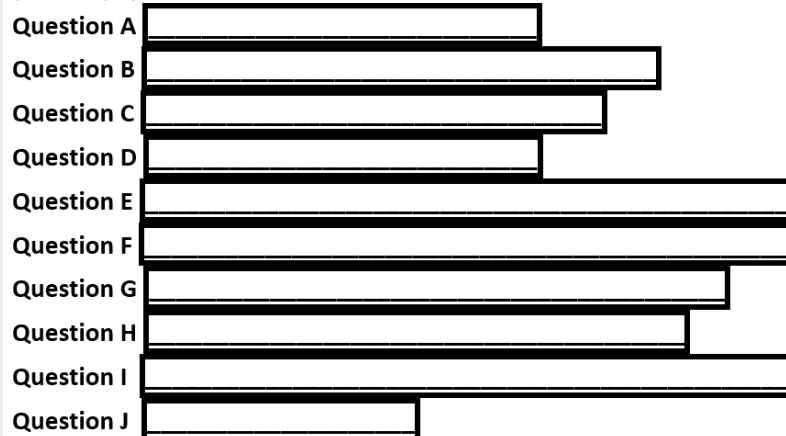
Domain 2

Domain 3

Domain 4

Client Satisfaction by Question

(Bar Graph)



Satisfied Clients

From Survey Data Excel file

HOMWORK REVIEW

Row Labels	Sum of Total population- Estimate	Sum of Male - Total	Sum of Female - Total	Average of Sex ratio (males per 100 females) - Estimate
Alabama	4850771	2350806	2499965	94
Alaska	738565	386319	352246	109.7
Arizona	6809946	3385055	3424891	98.8
Arkansas	2977944	1461651	1516293	96.4
California	38982847	19366579	19616268	98.7
Colorado	5436519	2731315	2705204	101
Connecticut	3594478	1754046	1840432	95.3
Delaware	943732	456876	486856	93.8
Grand Total	64334802	31892647	32442155	98.4625

PIVOT TABLE FIELDS

Choose fields to add to report:

Search

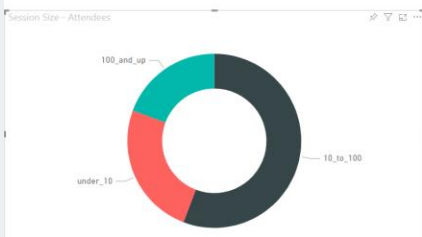
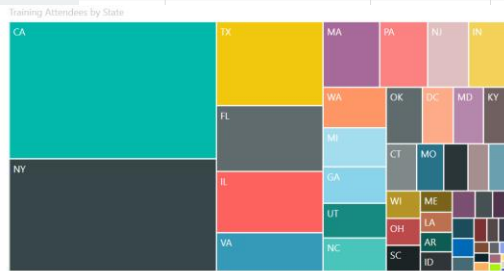
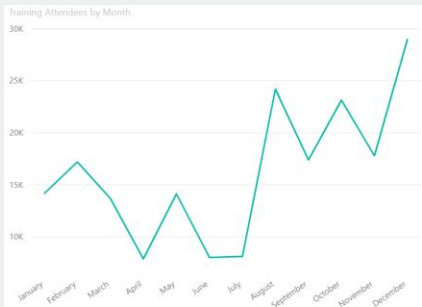
- State
- Total population- Estimate
- Male - Total
- Female - Total
- Sex ratio (males per 100 females) - Estimate

More Tables...

Drag fields between areas below:

Filters **Columns**

Σ Values



What can you learn from the dataset analysis and/or visualizations you prepared for today's session?

How can you use what you've learned?



OUTPUTS & OUTCOMES

What did we do? What are the results?

TO THE POLLS!

Which is a more pressing challenge for your organization?

- Quantifying exactly what you did (precise output counts) over time
- Understanding the impact of what you did (outcomes)





HOW DO YOU COUNT WHAT YOU'VE DONE?

What are your primary delivery mechanisms and how do you count them?

How many different data systems, sources or staff do your outputs come from?

THE SPECTRUM IS WIDE

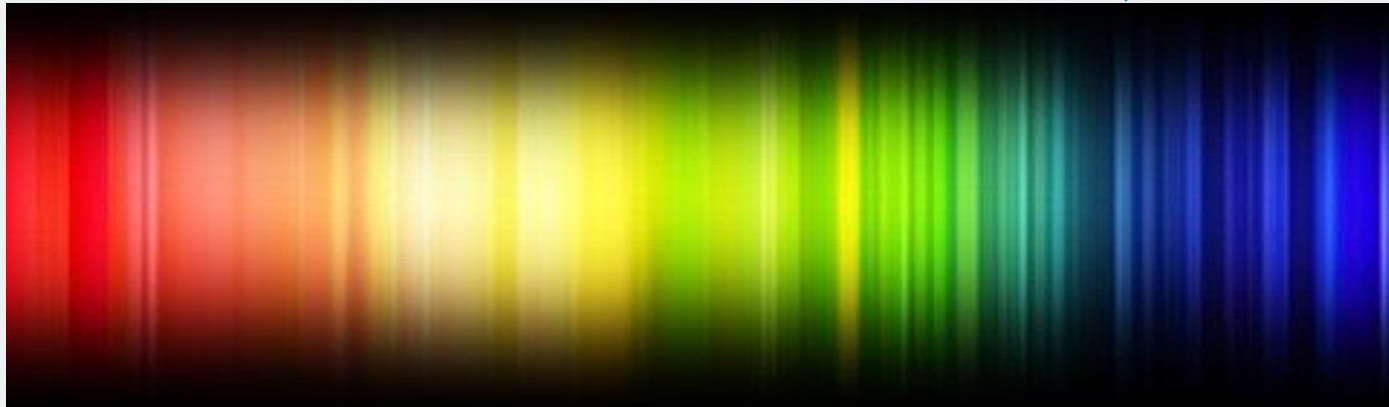
Multiple sources = spreadsheets, paper forms, data systems



A couple of central, clean datasets – like services aggregated in one source or place



An organizational database from which centralized, aggregated outputs can be reported on or exported for further analysis





OUTPUTS ANALYSIS IS STRAIGHTFORWARD ONCE AGGREGATED

1. Aggregation and synthesis are the (potentially) time consuming steps.
2. Summing, counting and disaggregating by group is relatively easy.
3. Getting the most timely outputs trends data into the right people's hands to USE is a big and overlooked step.

TO THE POLLS!

Does your organization have an evaluation plan?

- Yes
- No
- Not sure



TO THE POLLS!

If you do not have an evaluation plan, how do you determine the impact of your efforts?

- We use funder-driven outcomes.
- We have some program outcomes delineated.
- We struggle to do this.





HOW EASY IS IT TO AGGREGATE RESULTS (AKA OUTCOMES, IMPACT)?

Is this something that happens once a month, a quarter, or a year?

Does it occur for required external reporting?

How much staff effort is required to aggregate and synthesize data into clear outcomes reports?

USE THE RIGHT TOOLS TO AGGREGATE AND DISAGGREGATE RESULTS



System and process improvements should be considered depending on how much time it takes your staff to report on weekly, monthly, and yearly numbers.



USE FEWER SYSTEMS TO MAKE REGULAR DATA PULLS EASIER

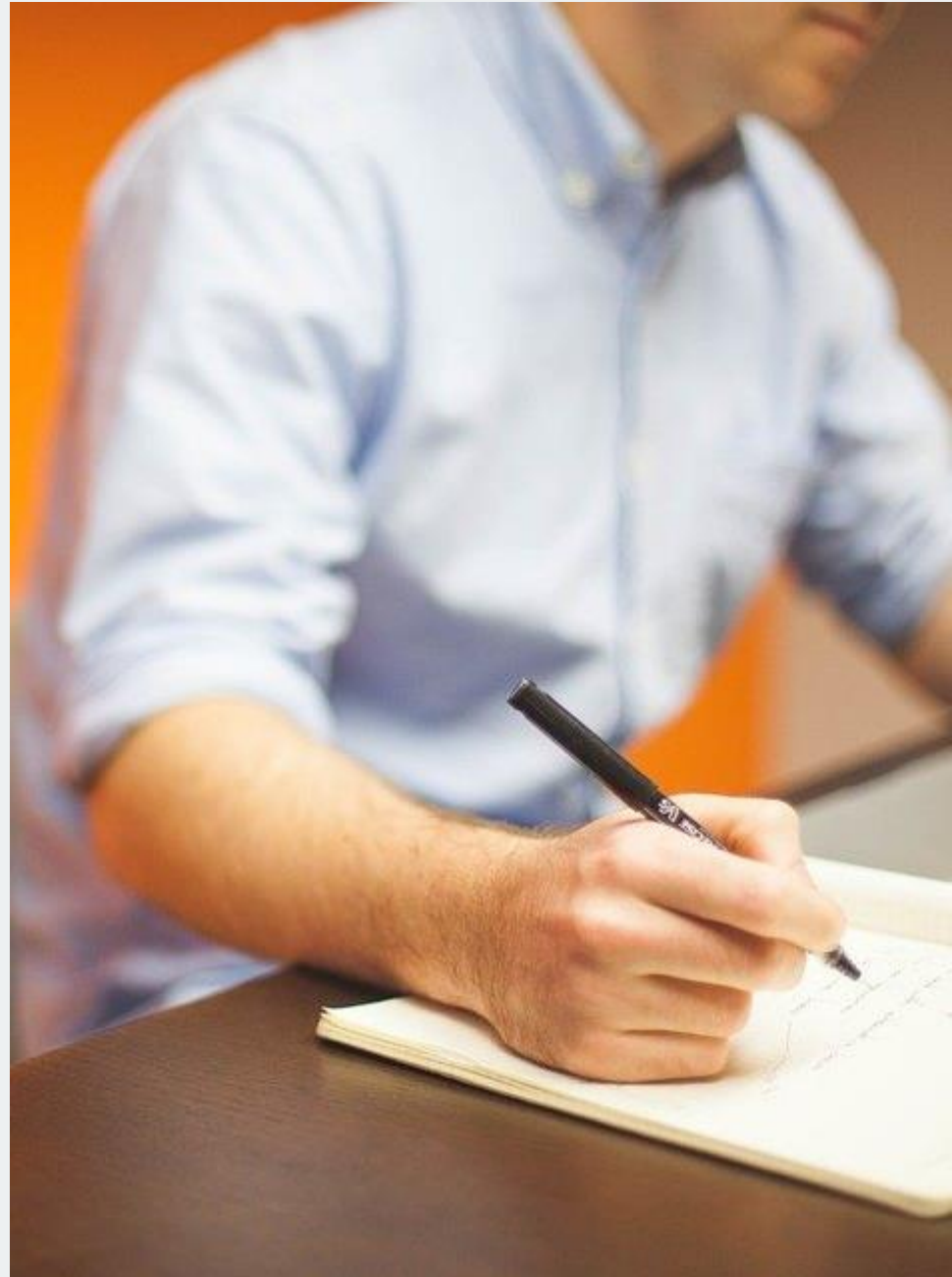
Many non-profit programs have to input data into government funder mandated systems.

These systems can proliferate at larger social service organizations.

We're likely stuck with them – and its not easy to get data out or in.

CENTRALIZED, UNDUPLICATED, ORGANIZATIONAL PROGRAM DATA

- Lots of manual pushing and pulling
- Centralized organizational database
- Data warehouse (pulling from multiple data sources)
- Enterprise business intelligence tool (sort of)



Relative Complexity

RELATIVE COMPLEXITY OF VARIOUS OPTIONS

Data Warehouse

ERP (Single Consolidated Enterprise DB)

Out of the Box DB

Integrating Two Out of the Box Databases

Dashboard

Excel

CENTRALIZED ORGANIZATION PROGRAM DATABASE

Note: this option will likely require double data entry, if you need also need to enter data into funder systems

- Organizational control - your terms, your data, your programs
- You pay for it! (unlike funder systems)

DATA WAREHOUSE

Usually an expensive option, it offers a place for centralized data, but data still has to be modeled/related which can be difficult.

It can require a lot of manipulation and technical skill to pull data in from various sources.

Example tools: Microsoft Azure SQL Server and Snowflake





REFLECTING:

What does your data mean?



DON'T STOP AT MEASURING OUTCOMES

Make sure outcomes and output reporting is used in a meaningful way.

Ensure this isn't completed just because you *have* to do it.

WHY DID THESE OUTCOMES OCCUR?

Reflect on data together -
does it make sense? Is it
complete?

Look at trends in data.

Why are certain things
happening? What is the
context?



TO THE POLLS!

How do you create meaning in the data you collect?

- Teams reflect on data output and/or outcome trends during regular meetings.
- Our organization looks at data together sometimes.
- We collect and report on the data externally. That's the end of the cycle.
- Other



MAKING MEANING OUT OF IMPACT DATA



What's working?

And what's not working so well?



Indicators that predict success

Which program elements are most likely to produce desired outcomes?



Data-driven warnings to staff or leadership

About which clients or programs need attention.

QUALITATIVE DATA, TOO!



There are enough challenges with Quantitative data synthesis and analysis that Qualitative data is often overlooked.

Non-profits collect or have easy access to a lot of Qualitative data in addition to Quantitative data.



QUALITATIVE DATA – YOU GOT IT!

Program participants have context for what works and what doesn't and why.

Staff on the front lines of service or program delivery are going to have insights that quantitative data cannot describe.

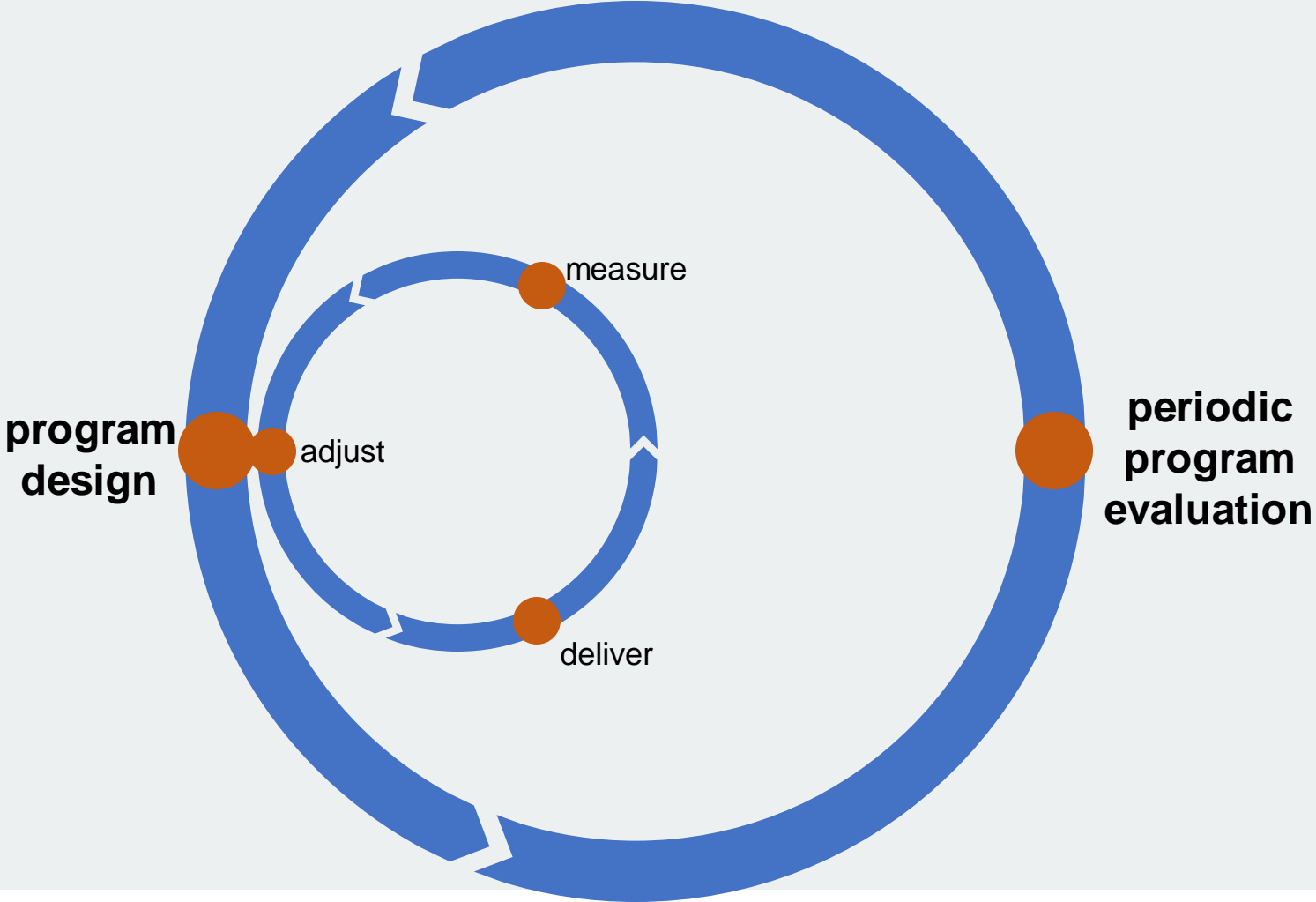
How do you incorporate qualitative data?



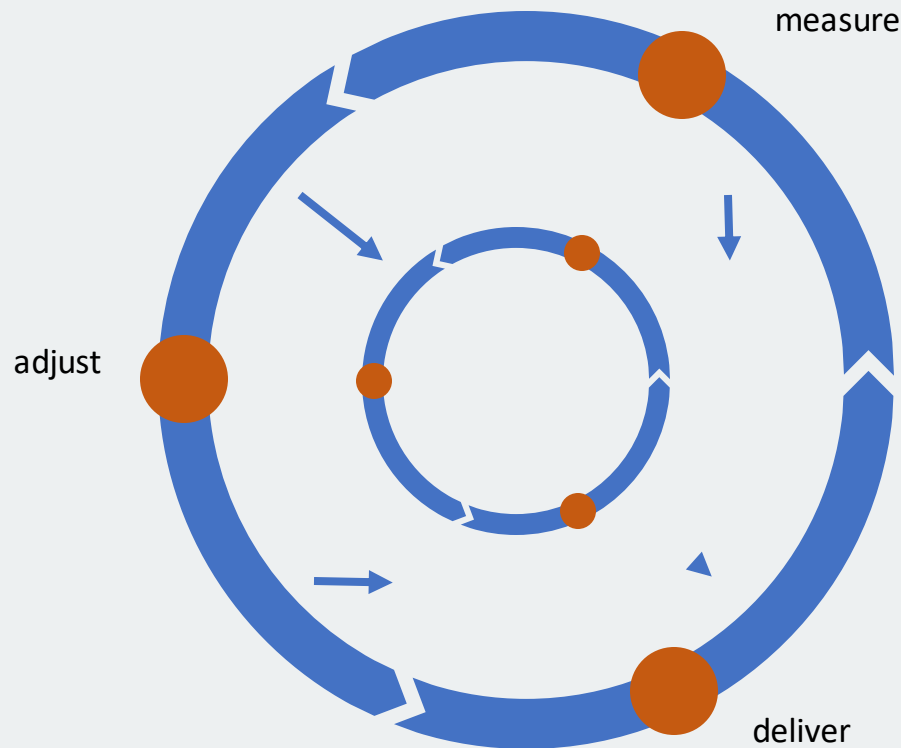
PLANNING

What should we do next?

TRADITIONAL NON-PROFIT PROGRAM DESIGN – DELIVERY –EVALUATION CYCLE IS ELONGATED



WE CAN SHRINK THIS CYCLE BY GETTING BETTER AT...



- Picking the *right* data
- Collecting the data
- *Making use* of the data



NOW WHAT?

Based on the meaning we are gathering (it's never over): now what?

Do things need to be adjusted? (Hint: the answer is yes)

How will we know and who will make the decision?



FUNDER VS. HOME GROWN PRIORITIES

There's a non-profit temptation to do what funders want.

Within the context of funder priorities, how do we know if it makes sense to do more of funders supported Service A or Service B in order to have the impact we want in our communities?

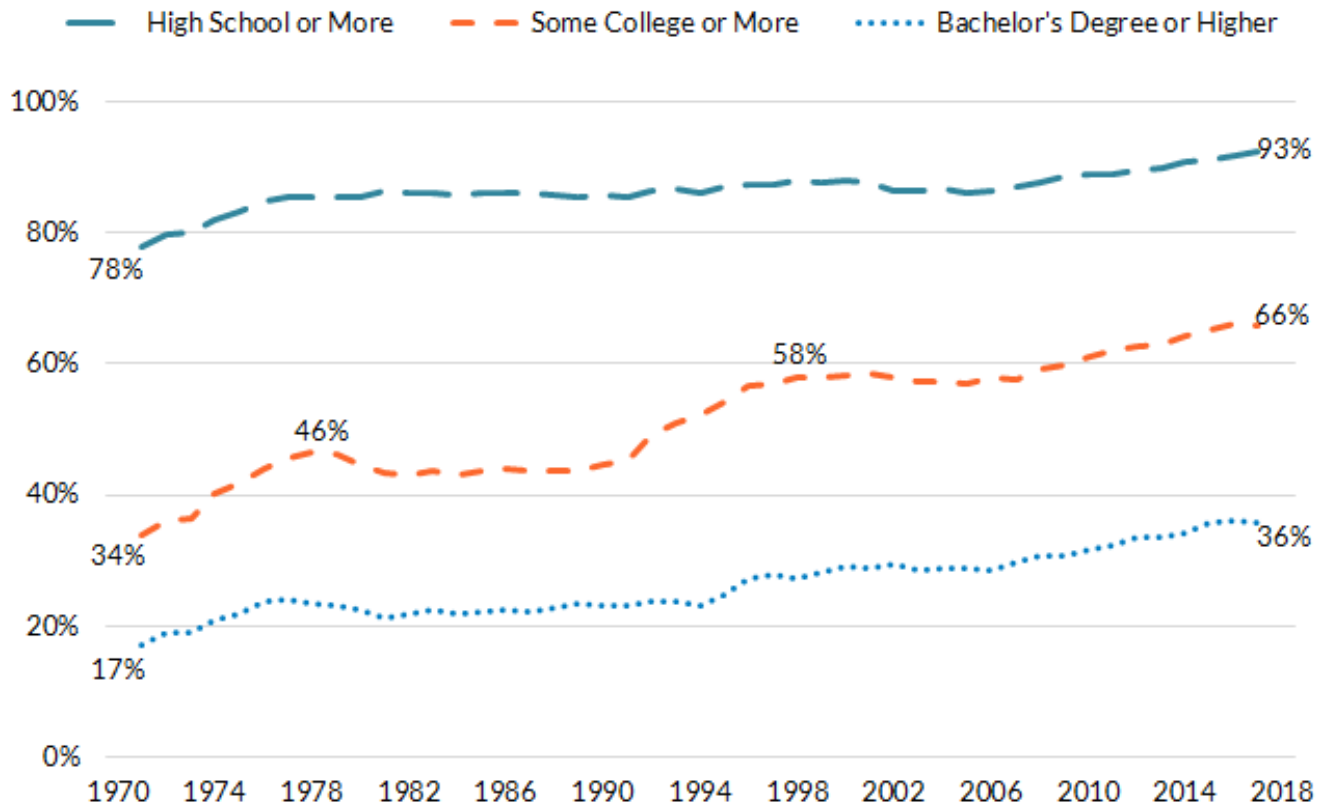


LOOKING BACK

Data for evaluation and continuous improvement

SUMMATIVE DATA: EXAMINING TRENDS

Percentage of Young Adults, Ages 25 to 29, With At Least a High School Diploma, With At Least Some College, and With At Least a Bachelor's Degree: 1971-2017



How are we doing over time?

What outcome has improved the most?

Has any outcome decreased?

Source: Data for 1971-2001: U.S. Department of Education, National Center for Education Statistics. (2002). *The Condition of Education 2002* (NCES 2002-025) [Tables 25-1, 25-2, & 25-3]. Washington, DC: Author. Retrieved from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2002025>. Data for 2002-2017: Child Trends' calculations using U.S. Census Bureau. (2003-2018). *Educational Attainment in the United States: Detailed Tables* [Table 1]. Retrieved from <https://www.census.gov/data/tables/2017/demo/education-attainment/cps-detailed-tables.html>.



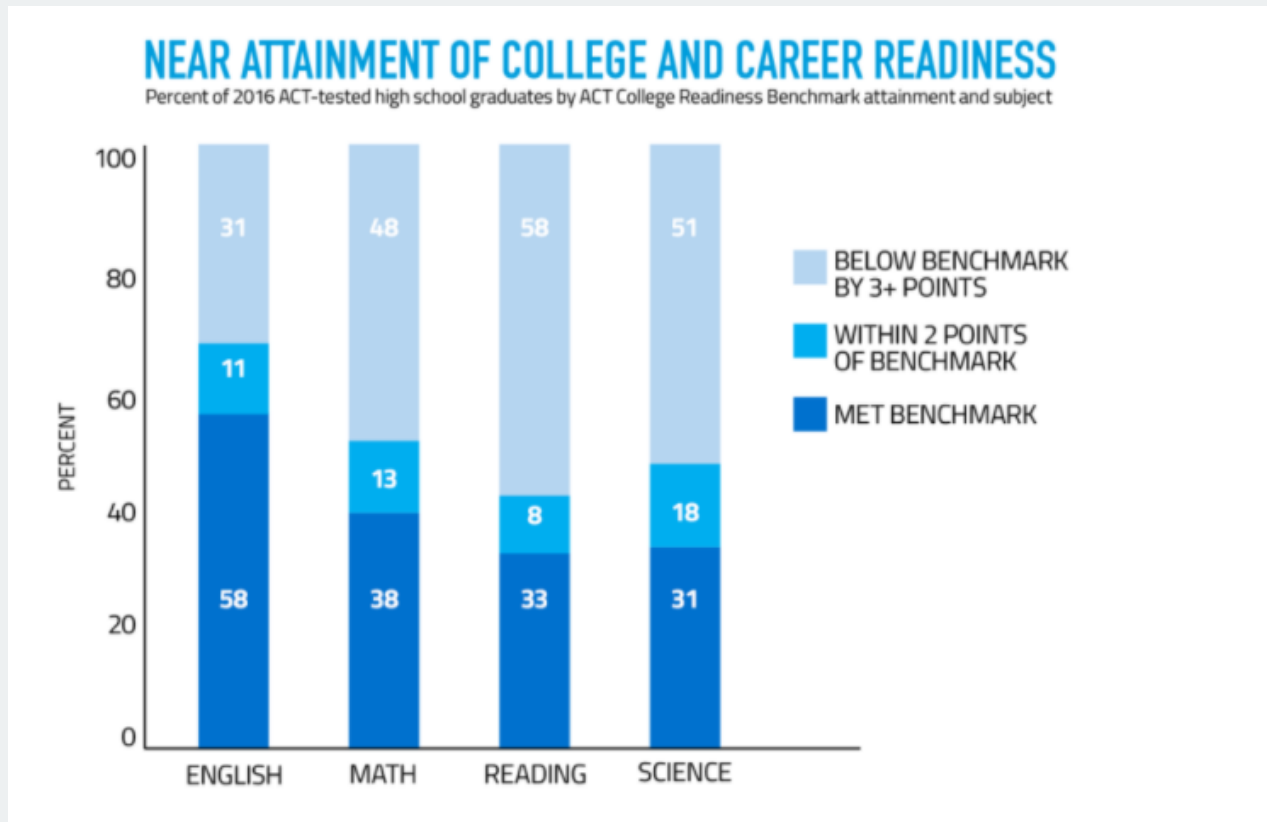
PAST OUTCOMES ALLOWS US TO SEE:

What happened and for whom
*(which groups have the best
program outcomes?)*

What were the factors that
contributed to those outcomes
*(which services or programs
result in the best outcomes for
participants?)*

Helps us infer what might
happen if we delivered more (or
differently) of certain services or
programs?

SETTING GOALS & BENCHMARKS



What are our benchmarks or targets and how did we perform compared to them during this time period or a previous one?



LOOKING NOW

Using Data for Operational Decision- Making

USING DATA FOR OPERATIONAL DECISION-MAKING

You need quick access to accurate, timely data if you are going to be making programmatic or operational decisions.



REAL-TIME DATA NEED DURING COVID

Case study example: Tech Impact works with an organization that runs a crisis hotline.

The organization used to report and review crisis hotline numbers and trends week over week or month over month and look at them monthly.

During COVID, the need to look at that data in that way + year over year. For example, a typical March or April (2019 or 2018) vs. 2020, when crises multiplied as people were in lock-down and confined to their homes. They needed to look at this every week and report it out to City funders.



LOOKING FORWARD

Using Data for Forecasting



HOW CAN WE USE OUR DATA TO HELP US PLAN FOR THE FUTURE?

Look at historic trends to help plan for future.

Look at trends by time period, by service/activity, and by outcome.

PREDICTIVE MODELING

Predictive analysis techniques:

- AI
- Machine learning

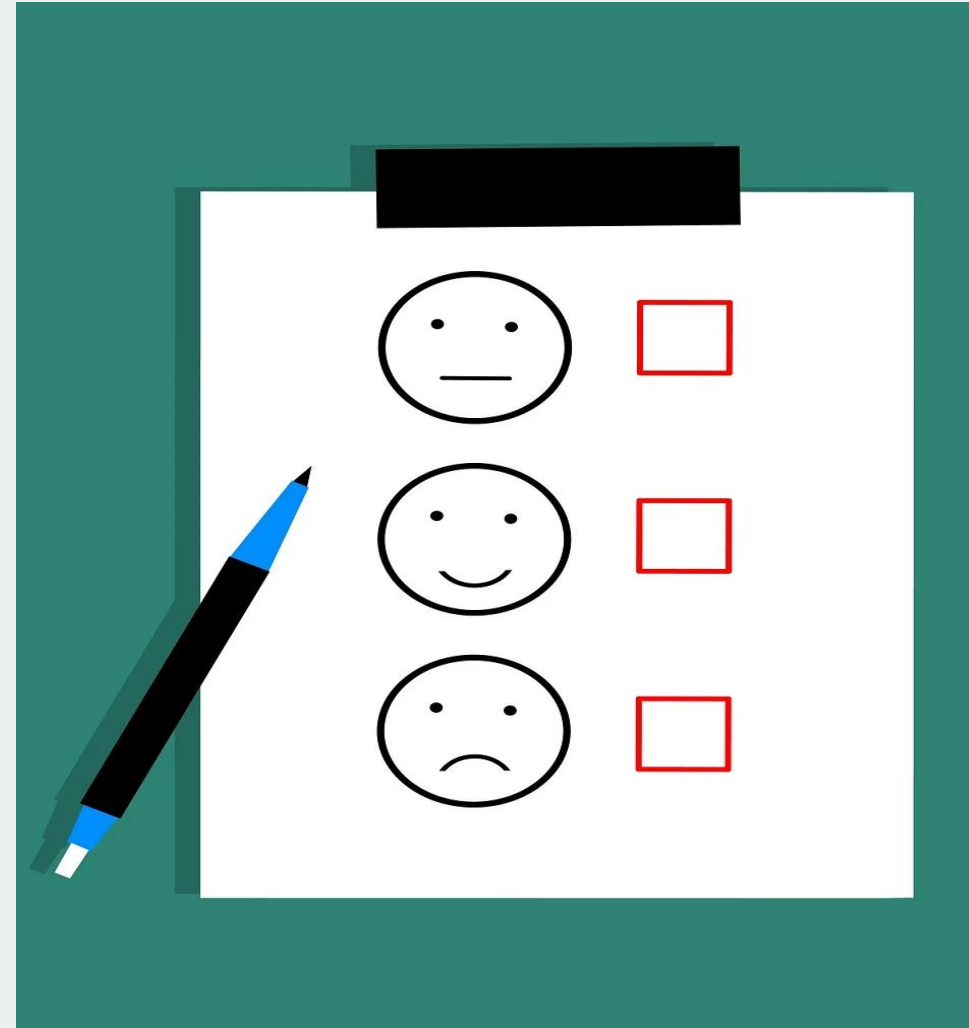


SURVEYS HELP US IMPROVE YOUR EXPERIENCE

You'll receive a short post-course survey following today's webinar.

Your insight and opinions help us figure out what was useful and what we need to add before we deliver it again.

Please share your opinions with us to help us improve your experience.



ACKNOWLEDGEMENTS

Thanks to the following who contributed to the development of this curriculum:

Lee Broderick

Erica Blake

Alyssa Ford

Colin Murphy

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THANK YOU

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