Field Guide to Living a Data-Rich Life

Webinar 4: Integrating Quantitative and Qualitative Data into Your Evaluation

Hosted by Durham's Partnership for Children, with support from the North Carolina Partnership for Children

Presented by Compass Evaluation and Research

Welcome

- Webinar 4 in our year long data quality series
- Last time (webinar 3), we discussed how to design outcomes
  - SMART outcomes
  - Tied to statements in your Logic Model
- Today, we will:
  - Review concepts from Webinar 3
  - Identify opportunities for quantitative and qualitative data

Recap from Webinar 3

- 5 practical steps for creating outcomes
  - Step 1: identify the “Big Picture Need”—the need domains the funder is interested in
  - Step 2: identify data that express the level of “Big Picture Need” in your community—typically quantitative
  - Step 3: understand HOW and WHY the need exists in your community or target population
  - Step 4: choose programs or models that will meet your community or population preferences or service needs
  - Step 5: design outcomes that are SMART

Design Outcomes that are SMART

- Needs and outcomes statements should be **SPECIFIC**
  - Well-defined need statements lead to high quality outcomes
- High quality outcome measures are **MEASURABLE**.
  - Will high-quality, outcome-specific data be available for the evaluation?
  - If not, can you capture these data through your evaluation, with the available time and resources?

Design Outcomes that are SMART

- Good outcomes reflect changes that are **ACHIEVABLE** within a given timeframe.
  - What financial, tangible, and other resources will be necessary to achieve the goal?
  - What is the likelihood that each program participant will experience success in the program?
- **RELEVANT** outcomes address the degree to which the underlying need or problem has been alleviated

Design Outcomes that are SMART

- Good outcomes are achievable within a defined period of **TIME**.
- Short-term outcomes provide earliest evidence the program model is working
  - Reflect why the need is present in your target population
  - What system failures or absences exist?
- Longer-term outcomes reflect the need the funder is trying to address
  - May require two or more years to achieve
  - Depend upon successful completion of short-term outcomes

Outcomes and Outcome Statements

- Logic models contain outcomes
  - Typically shorter statements
  - Tied to needs (either big picture or little picture)
    - Reflect the system or service changes that have to occur
  - *Example: providers will improve classroom practices* or *parents will improve skills and confidence*

- Outcomes should be translated into specific statements as to what changes will be measured, how they will be measured, when they will be measured, etc.

Good Outcome Statements Identify Who, What, When, and How

- **WHAT** will change
- **WHO** is exhibiting or achieving the change
- **WHEN** will change be measured
- **HOW** will change be measured

- But not necessarily in this order
- **Targets** or performance benchmarks can be established *(and is a great way to bring past research into your evaluation)*

Examples of Outcomes and Outcome Statements

Outcomes	Outcome Statements
Child care providers will improve classroom literacy practices	As of the end of the project year (**WHEN**), at least 50% of child care providers (**WHO**) will demonstrate an increase (**WHAT**) of at least 1 point (**TARGET**) on an observation of literacy practices within their classroom. (**HOW**)
Child care providers will improve teacher-child interactions	Each spring (**WHEN**), child care providers who received technical assistance and who participate in provider focus groups (**WHO, HOW**) will report improvements in teacher-child interactions. (**WHAT**)

Types of Data

Quantitative—numerical; can use mathematical or statistical techniques

- Sums, percentages, averages
- Subject to statistical analyses

Qualitative—narrative; data are not easily subject to mathematical or statistical techniques

- Content analysis
- More interpretive

Quantitative Data

Things you can **count**, such as:

- The number of parents served
- The number of trainings conducted

Note: you may have heard the terms Duplicated and Un-Duplicated when talking about quantitative data

- Duplicated count: count an individual in each training he or she attended. *For example, reporting that over 5000 providers attended trainings—when there are only 1000 providers in the county*
- Unduplicated count: count the individual the first time he or she uses a service, even though he or she may use the service multiple times. *Example: a child is enrolled once in NCPK, even though he is on the attendance forms each month*

Quantitative Data

Subject to mathematical or statistical techniques

- Calculate the mean (or the average)
- Calculate the median (the middle value, if you line all of your data up in numerical order)
- Calculate the mode (the value that occurs the most)
- Describe the range (the start and end points)

Quantitative Data

Example: let's say there are 7 scores on a test that run as follows: 50, 60, 62, 50, 75, 70, 50

Mean: (50+60+62+50+75+70+50)/7 = **60**

Median: line up the values in order: 50, 50, 50, **60**, 62, 70, 75

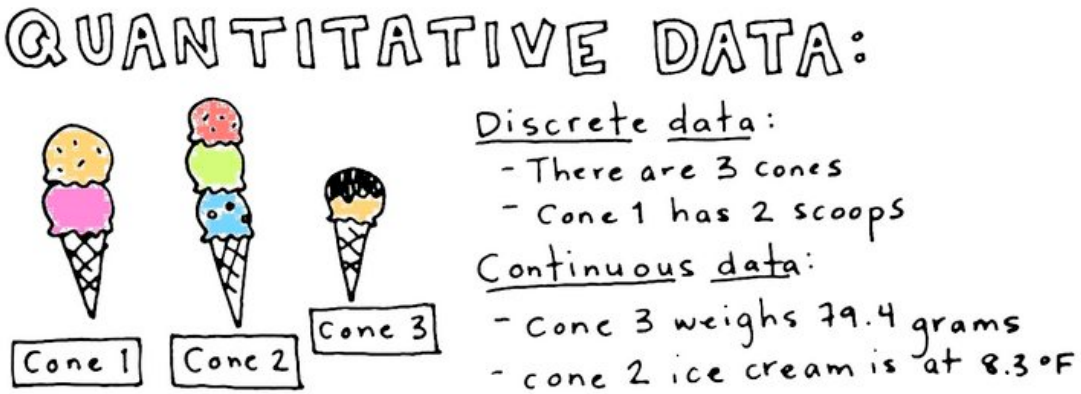
Mode: **50** appears three times

Range: scores ranged from **50** to **75**

Quantitative Data

Should I be trying to use statistical tests?

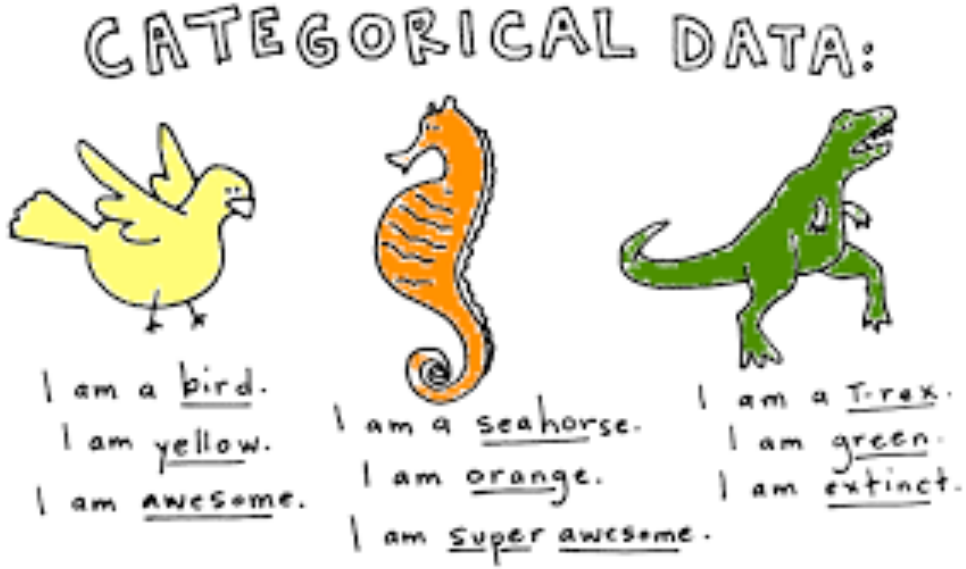
Maybe. It all depends on the type of data you have.



- Interval data: there is a long range of values possible (tens of values are possible, if not more) and the distance between any two units is the same
  - Examples: height and weight—each unit (pound, inch) is the same
- Discrete data: you can count the total number of something and perform basic math functions

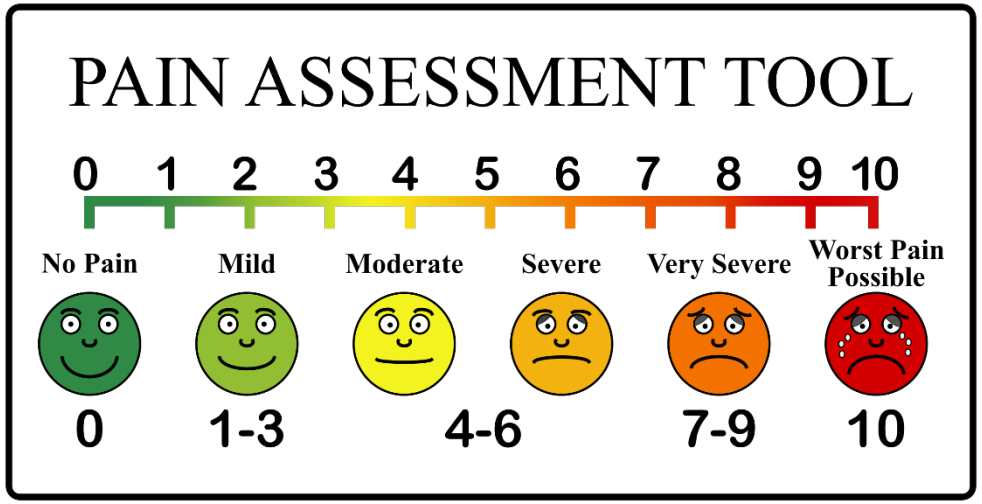
Quantitative Data

- Categorical data: each category describes something unique but does not confer a precise measurement—you can't calculate an average or sum
  - Example: zip code
- Binary data: only two values are possible
  - Example: responses that are either "yes" or "no"



Quantitative Data

- Ordinal data: there typically is a smaller range of values possible (1-10, for example) and we can't accurately measure the distance between any two units—we only know that one value is more than another or less than another
  - Examples: what is the difference between the numbers on the pain scale? Is the difference the same for everybody?



Possible Mathematical Treatments

When in doubt, ask!

	Frequency Distribution (% of respondents who reported…)	Measures of Central Tendencies (Mean, Mode, Median)	Statistical Tests for Inference
Binary Data	✓		
Categorical Data	✓		
Ordinal Data	✓	**Maybe—very, very carefully**	
Discrete Data	✓	✓	
Interval Data	✓	✓	✓

Qualitative Data

Things you can **describe**, such as:

- How parents are feeling before and after they receive services
- How well the training was conducted
- Why a client wanted to receive or attend a service

Analyze using techniques such as **content analysis**

- Process for reviewing qualitative data multiple times to find themes
- Useful for generating quotes and vignettes, or real life examples

Example

When asked in an interview what changes she made in her classroom, as a result of a training, a provider reported:

I do what I can, you know. Its hard sometimes. I go to the training to get new ideas, you know. I try to bring it back to the classroom, like the idea for making decorations. But its hard with everything we have to do. I do think we need the trainings though. Its good to get new ideas.

How Do I Do a Content Analysis?

Hsieh and Shannon (2005) described three approaches:

1. Conventional:
    1. *Read everything once*
    2. *Go back to each document (e.g., interview script) and start identifying themes, as they appear*
    3. *Highlight each passage or response in which you see a theme*
    4. *Once all documents are done, review the responses collected in each theme. You can decide if there are sub-themes, etc. and split out responses accordingly.*
    5. *Summarize the data according to themes and sub-themes, in response to specific evaluation questions*

How Do I Do a Content Analysis?

Hsieh and Shannon (2005) described three approaches:

2. Directed Approach

    1. *Decide in advance what the themes are*
    2. *Read all documents and code passages for the pre-determined themes*
    3. *Summarize the data according to the pre-determined themes, in response to specific evaluation questions*

How Do I Do a Content Analysis?

Hsieh and Shannon (2005) described three approaches:

2. Summative Approach

1. Decide in advance specific words that you will search for (e.g., child care quality)

2. Find each instance in which the word or words appear, noting who the respondent is—the interviewer or the interviewee

3. Review each passage in which a word or idea appears for additional contextual data generated by the interviewee. In particular look for (a) positively- or negatively-framed responses; (b) interviewee choosing to redefine or use the word in a different way than was intended; and (c) overall response to the prompt

Content Analysis Software

Free	Proprietary
Aquad	Atlas.ti
Coding Analysis Toolkit	Dedoose
Compendium	Ethnograph
Digital Replay System	HyperRESEARCH
QDA Miner Lite	MAXQDA
RQDA	Nvivo
Weft QDA	QDA Miner
	Qualrus
	Transana

So—do I use quaNtitative or quaLitative data in my evaluation?

That depends!

- What is your outcome statement? Is it more quantitatively or qualitatively oriented?
- How much do you want to explain about your outcome?
  - Remember, qualitative data help you explain the how and why
  - Can be very important if you don't achieve the quantitative results you were hoping for
- Can you afford a mixed methods approach and collect both types?

So—which type do I use?

Example:

The project fell short of achieving its benchmark of 90% of providers demonstrating a gain of at least 1 point. (quantitative finding) However, when interviewing providers who fell short of the desired gain, it was apparent that these were providers who were new to the field and feeling overwhelmed. (qualitative finding)

How do I plan for both?

Tip: Develop evaluation questions, in addition to outcomes

Logic Model Outcomes	Outcome Statement	Evaluation Question	Data Sources
Child care providers improve classroom literacy practices.	As of the end of the project year, at least 50% of child care providers will demonstrate an increase of at least 1 point on an observation of literacy practices within their classroom.	To what extent did the expected number of providers achieve the desired gain?	Quantitative: the observation of literacy practices in the classroom Instrument: Early Language and Literacy Classroom Observation
		Why did some providers (a) achieve more than the desired gain or (b) less than the desired gain?	Qualitative: Provider interview or survey
		What other gains were made, that were not captured in the outcome statement?	Qualitative: Provider interview or survey Quantitative: additional rating scale (ECERS, etc.)

How do I plan for both?

Tip: Develop evaluation questions, in addition to outcomes

Evaluation Question	Data Sources	Reporting
To what extent did the expected number of providers achieve the desired gain?	Quantitative: the observation of literacy practices in the classroom Instrument: Early Language and Literacy Classroom Observation	Quantitative: WHAT and HOW MUCH happened? Did the project meet or exceed its targets? Qualitative: HOW and WHY did change occur (or not occur)? How can services be improved in the future?
Why did some providers (a) achieve more than the desired gain or (b) less than the desired gain?	Qualitative: Provider interview or survey	
What other gains were made, that were not captured in the outcome statement?	Qualitative: Provider interview or survey Quantitative: additional rating scale (ECERS, etc.)	

Review

- As suggested in Webinars 1, 2, and 3—start with a logic model that links your needs to your services and your desired changes
  - Desired changes: outcomes
- Construct outcome statements that are **SMART** and contain specific information about **WHAT** will change, **WHO** is exhibiting or achieving the change, **WHEN** will change be measured, and **HOW** will change be measured
- Construct evaluation questions that allow you to ask not only what and how much happened, but also why and how change did (or did not) occur

Review

- Link your evaluation questions to possible quantitative and qualitative data sources

	Quantitative Data	Qualitative Data
Report HOW MUCH or an AVERAGE	YES* *remember, some types of numerical data are limited	NO
Report HOW and WHY	MAYBE Depends on the instrument	YES
Report the % OF RESPONSES	YES	YES
Complete STATISTICAL TESTS	YES* *remember, some types of numerical data are limited	NO

Webinars 5-7

- Focus on instruments used for collecting data
- What instruments can be used for quantitative data collection?
  - Surveys (webinar 5)
  - Observations (webinar 6)
  - Standardized Assessments (webinar 7)
- What instruments or techniques can be used for qualitative data collection?
  - Surveys (webinar 5)
  - Interviews (webinar 5)
  - Focus groups(webinar 5)
  - Observations (webinar 6)

Questions?

Next Steps

The webinar series is designed to help you create a plan to capture, manage, analyze, and use high quality data:

- **May 25, 2016:** Designing or Choosing Instruments: *Surveys*.
- **June 28, 2016:** Designing or Choosing Instruments: *Observations.*
- **July 12, 2016:** Designing or Choosing Instruments: *Standardized Assessments.*
- **July 27, 2016:** Choosing and Using Sampling in Your Evaluation.
- **August 30, 2016:** Best Practices in Data Collection and Management.
- **September 28, 2016:** Finding the Value in Evaluation: *Cultural Relativity and Bias.*
- **October 25, 2016:** Using Data: *Effective Reporting and Grant Writing.*
- **November 30, 2016:** Thinking Beyond Your Program: *Evaluating Systems and Collaborations.*

Additional questions?

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Additional questions?

Feel free to contact me, too!

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