Analyzing, Reporting, and Disseminating Qualitative Research

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Agenda

- Orientation to Qualitative Analysis in Implementation Research
- Preparing for Qualitative Analysis
- Common Approaches to Qualitative Analysis
- Managing Data for Qualitative Analysis
- Applying Coding Basics
- Drawing and Verifying Conclusions
- Examples of Qualitative Analyses
- Sharing Findings from Qualitative Implementation Research

Review of Previous Sessions

- Session 1. Introduction to Qualitative Methods in Implementation Science
  - Overview of qualitative research approaches, data and methods, organizing and preparing a qualitative research study

- Session 3. Interviews and Focus Groups
  - Nuts and bolts on conducting individual interviews and focus groups, including basics on recruitment, sampling, creating interview/focus group guides, conducting interviews, hosting focus groups, and tips for virtual data collection

Qualitative Research in Implementation Research

- Inform, describe, and evaluate implementation process and outcomes
- Often requires rapid turnaround to be of optimal value
- More deductive/top-down than inductive/bottom-up
- Influenced by conceptual models and their constructs
- Must be open to findings not keeping with models and constructs
- Can apply multiple analytic/interpretative strategies to same data
- Explain what you did and processes for assuring integrity (e.g., search for rival explanations/disconfirming evidence) and credibility (e.g., triangulation)

-Hamilton and Finley, 2019; Patton, 2015

Qualitative Data vs Quantitative Data

	Qualitative Data	Quantitative Data
Qualitative Analysis	Interpretive text studies (e.g., Grounded Theory)	Search for and presentation of meaning in results of quantitative processing
Quantitative Analysis	Turning words into numbers (e.g., Classic Content Analysis)	Statistical and mathematical analysis of numeric data

-Adapted from Bernard, Wutich, and Ryan, 2016

The Challenge of Qualitative Analysis

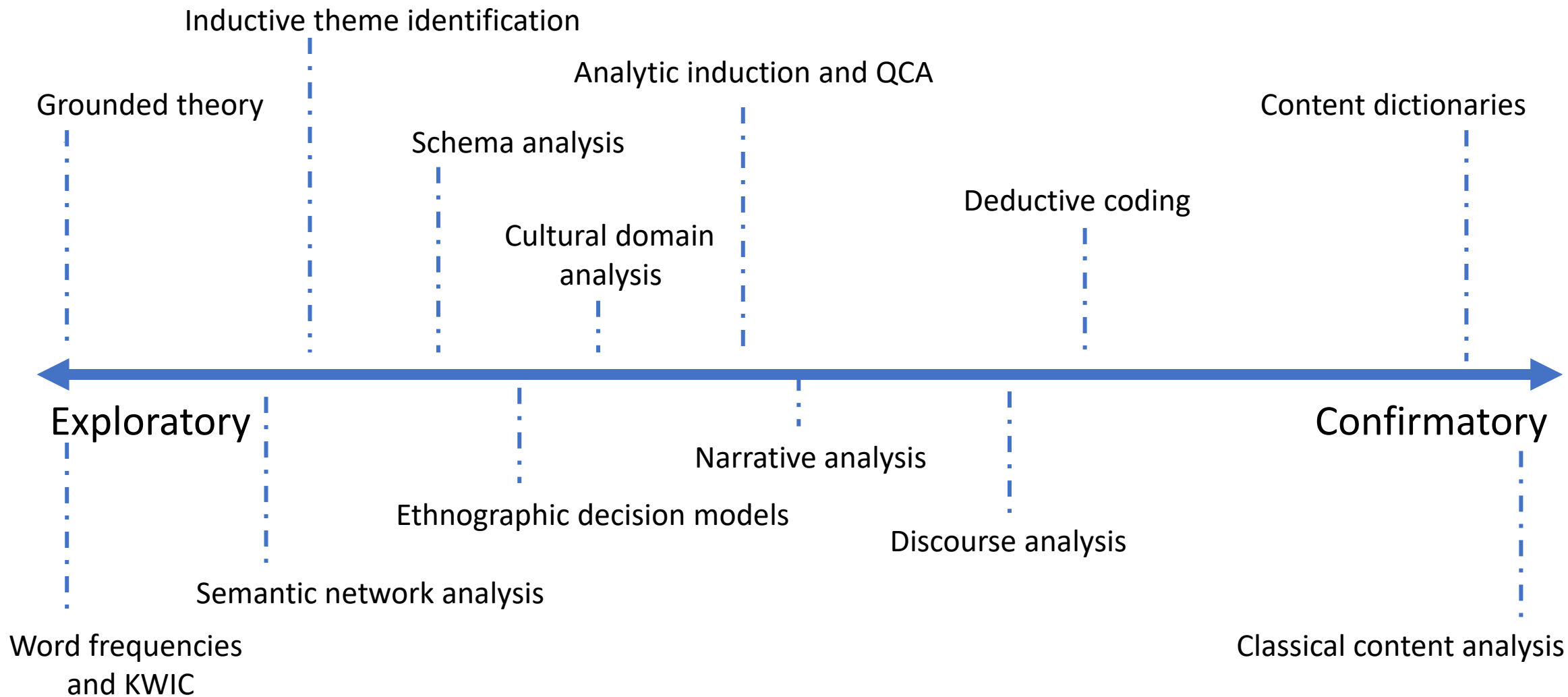|	
Making Sense	• Making sense of massive amounts of data
Reducing	• Reducing the volume of raw information
Sifting	• Sifting trivia from significance
Identifying	• Identifying significant patterns
Assuring	• Assuring rigor and credibility
Communicating	• Communicating what it all means

-Patton, 2015

Inductive theme identification

Analytic induction and QCA

Grounded theory

Content dictionaries

Schema analysis

Cultural domain analysis

Deductive coding

Exploratory

Confirmatory

Narrative analysis

Ethnographic decision models

Discourse analysis

Semantic network analysis

Word frequencies and KWIC

Classical content analysis

-Adapted from Bernard, Wutich, and Ryan, 2016

In reality...

- We often use a combination of inductive and deductive analysis

- Inductive analysis

  - Generating new concepts, explanations, results, and/or theories from the specific data of a study

- Deductive analysis

  - Determining the extent to which non-numeric data in a particular study support existing conceptualizations, explanations, results, and/or theories

Main Issues in Data Management

- Striving for:
  - High quality, accessible data
  - Documentation of analyses performed
  - Retention/disposition of data and associated analyses after study ends
  - Ample/plentiful data to ensure research question is appropriately addressed without over-sampling

-Miles et al., 2020

Talk = Text

- A one-hour qualitative interview will generally yield approximately 10 to 15 single-spaced pages of text

- Ten two-hour interviews will yield about 200 to 300 single-spaced pages of text

-Patton, 2015 and our collective experience

No Skimping on the Upfront Work

Goal is to ensure transcripts can be readily imported into coding software program

Do not fall behind on transcription (or fieldnotes)!

Do not underestimate the time and money its takes to get data prepared, whether you do it in-house or contract with a transcription services
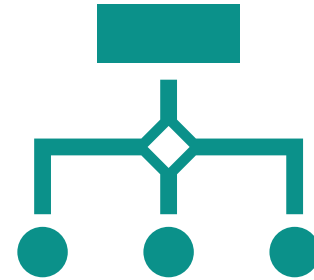
Even using built-in transcribing AI capabilities requires careful "proofreading" by human

If data are structured or in semi-structured form, instruct transcriber to format the document *specific to coding software program requirements*

De-Identify the Data
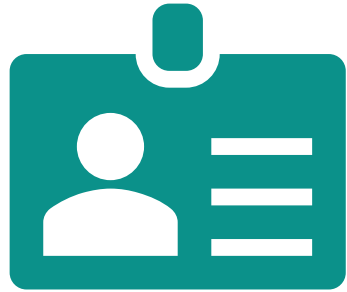
Assign unique identification (ID) code to each participant or interview

Maintain separate list with relevant participant information and the (ID) codes

Create Folders with a Directory

Site (or case)

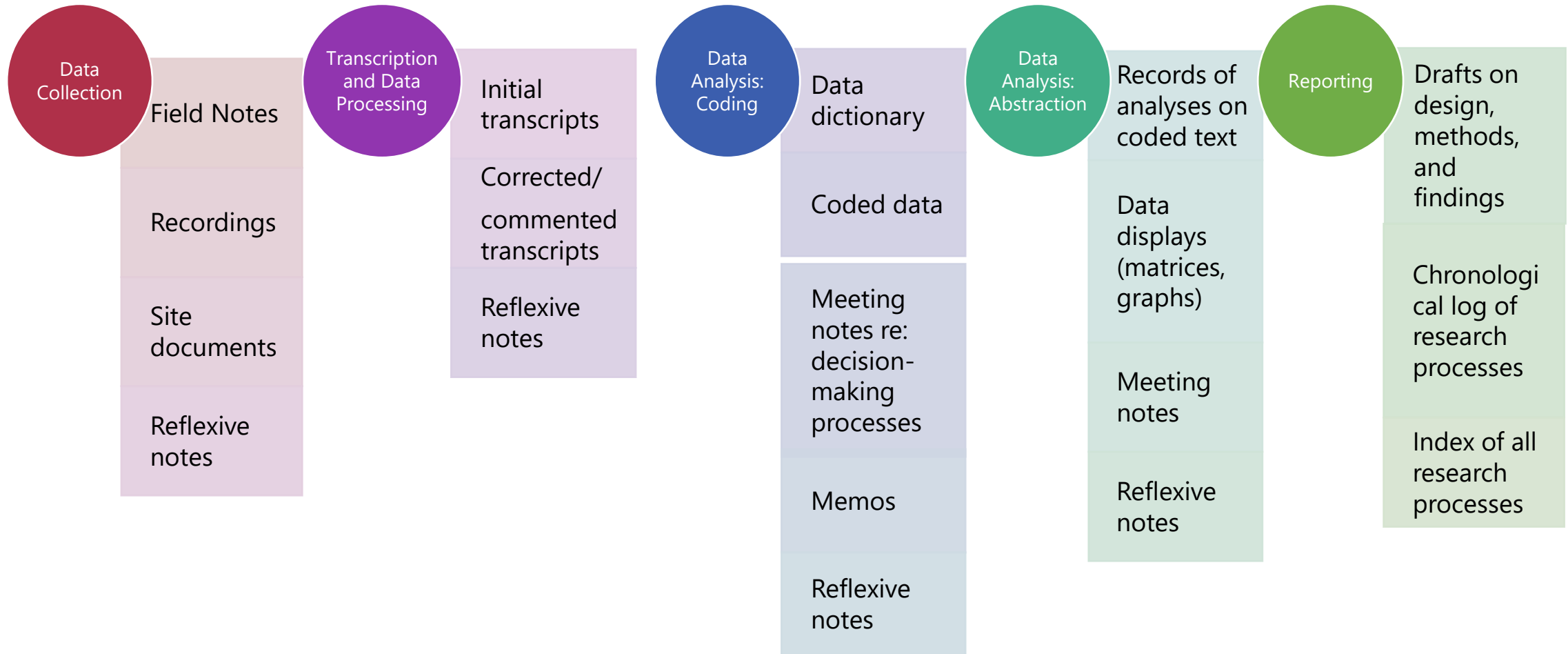Interviewee Type

Data Type

Always maintain clean copies of the prepared data!

What to Keep: Wish List

- **Goal:** If an independent research team were given your dataset and the audit trail of all pertinent materials and step-by-step decisions, they could reach the same findings

-Miles et al., 2020; Patton, 2015

What to Keep: Wish List

Data Collection
- Field Notes
- Recordings
- Site documents
- Reflexive notes

Transcription and Data Processing
- Initial transcripts
- Corrected/ commented transcripts
- Reflexive notes

Data Analysis: Coding
- Data dictionary
- Coded data
- Meeting notes re: decision-making processes
- Memos
- Reflexive notes

Data Analysis: Abstraction
- Records of analyses on coded text
- Data displays (matrices, graphs)
- Meeting notes
- Reflexive notes

Reporting
- Drafts on design, methods, and findings
- Chronological log of research processes
- Index of all research processes

-Miles et al., 2020

Empowering Staff

- Build in time to sit down as a group to discuss:

  - Plan to code as a team

  - Thoughts about using the selected software as a team

- Incorporate discussion into easily accessible data management protocol

- Create capacity to access and share files if more than one person using the same software, i.e., a "shared drive" to manage data

Four (Non-linear) Phases of Qualitative Data Analysis

1. Coding

Process of labeling segments of data for purpose of indexing, organizing, and categorizing

2. Categorizing

Review and organize coded data into more abstract clusters, or categories

3. Conceptualizing

Examine patterns, categories, and ideas to build structural meaning units of data

4. Interpreting

Develop an understanding of common threads across dataset that characterize the data and respond to the research question

Categorizing

Coding

Conceptual-izing

Interpreting → **Results**

-Richards & Morse, 2007
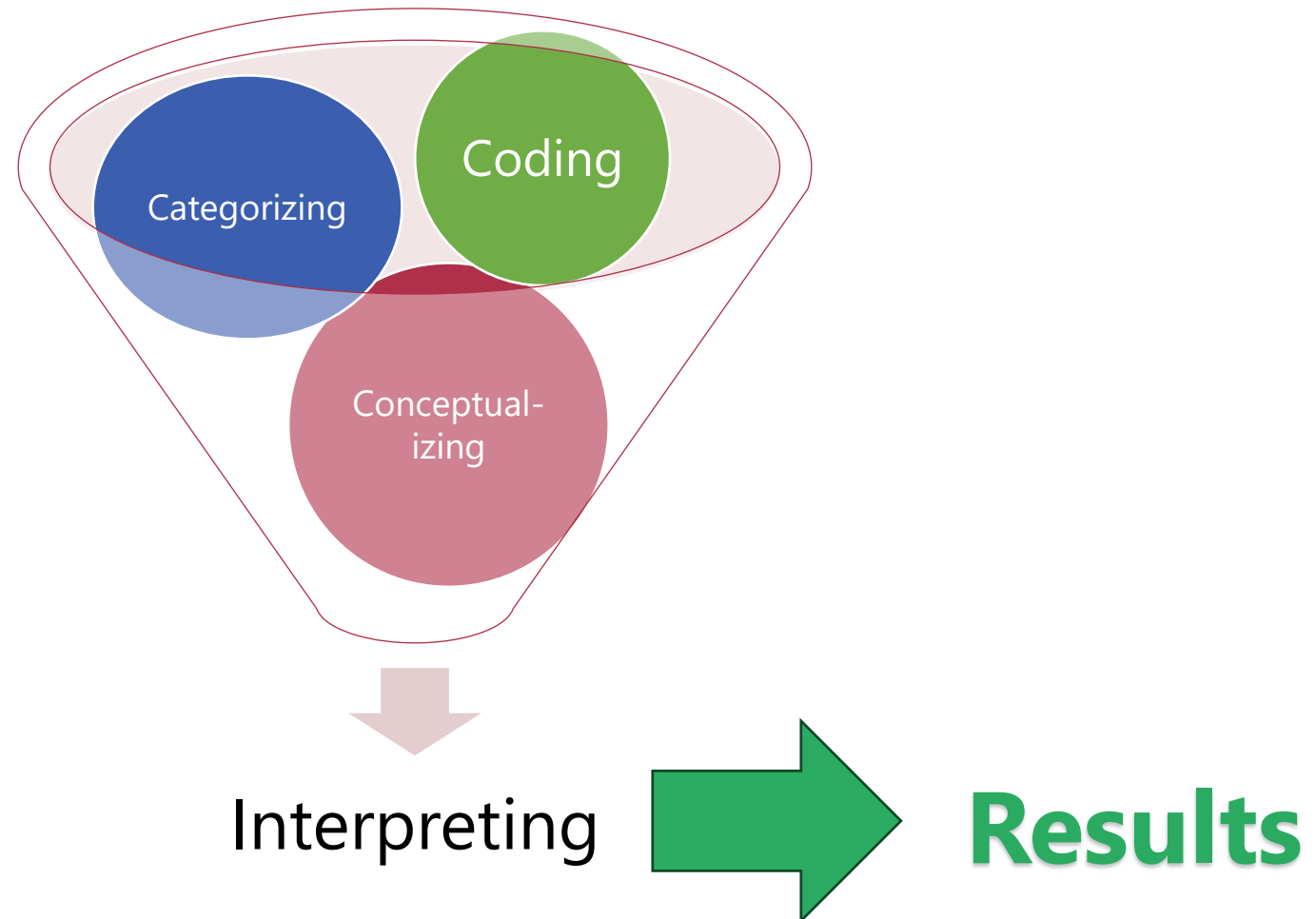
Organizing Qualitative Data Analysis

Processes

Important processes, i.e., phased implementation framework to organize qualitative descriptions

Issues

Organize analysis to illuminate key issues derived from the primary research, i.e., how school policies and procedures changed over time

Questions

Analyze data question by question, i.e., grouping together responses to questions about outer- and inner-context factors shaping implementation

Sensitizing Concepts

Organizing and describing phenomena through key concepts that guided fieldwork, i.e., common implementation concepts or abstract notions as well

-Patton, 2015

Analyzing Text: Five Steps

1. Discovering themes and subthemes

2. Describing core and peripheral elements of themes

3. Building hierarchies of themes or codebooks

4. Applying themes

5. Linking themes to theoretical models

-Bernard, Wutich, and Ryan, 2016

Discovering Induced Themes and Subthemes

Observational techniques
      1. Repetitions
      2. Locally derived typologies or categories
      3. Metaphors and analogies
      4. Transitions
      5. Similarities and differences
      6. Linguistic connectors
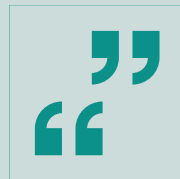   7. Missing data
      8. Theory-related material

Using Deduced Themes

Drawn from conceptual models, theoretical frameworks, literature review, and/or research team expertise

For example, the EPIS Framework guides us to consider individual adopter characteristics like values, goals, social networks, and perceived need for change

We often tie these concepts to our data collection instruments so the data we are looking for regarding these concepts is easily found

Applying Coding Basics

What Is a Code?

Short name/phrase standing for a group of similar items, ideas, or phenomena a researcher notices in a dataset

Name is usually close to the concept it describes

Should help you condense data into a manageable form for analytitic purposes

-Lecompte and Schensul, 1999

What Is a Code?

Inductive codes

- Predetermined through close examination of data

A priori /deductive codes

- Generated prior to review of data
  - Theoretical framework
  - Research questions
  - Evaluation design

Old School Coding

- Read through fieldnotes and interview transcripts

- Make comments in the margins

- Attach post-it notes that contain your notations of what to do with different parts of the data

- Start identifying topics and assign them labels

- Write shorthand codes in the margins of relevant passage; passages may be assigned multiple codes

- Once coding categories determined (and this may take several readings of the data), formal coding can begin

"There is no shame in using colored highlighter markers when coding."

-Patton, 2015

New School

- Computer-assisted qualitative data management and analysis

  - Facilitates data storage, coding, retrieval, and linking

  - Speeds up process of locating coded themes, growing data into categories, comparing passages in transcripts, etc.

  - The researcher—not the software—must still decide on what goes together to form a pattern, what constitutes a theme, and what to name it, etc.

-Patton, 2015

Using Qualitative Data Analysis Software Tips

- Coding software does not always conform to intuitive processes or expectations of more familiar applications; unless you have a certifiable coding expert on staff who is good at teaching others, pay for professional training

- Otherwise, the project may end up absorbing the often unexpectedly high cost that self-training entails; coding quality may also suffer

- Use it or lose it; begin coding soon after training
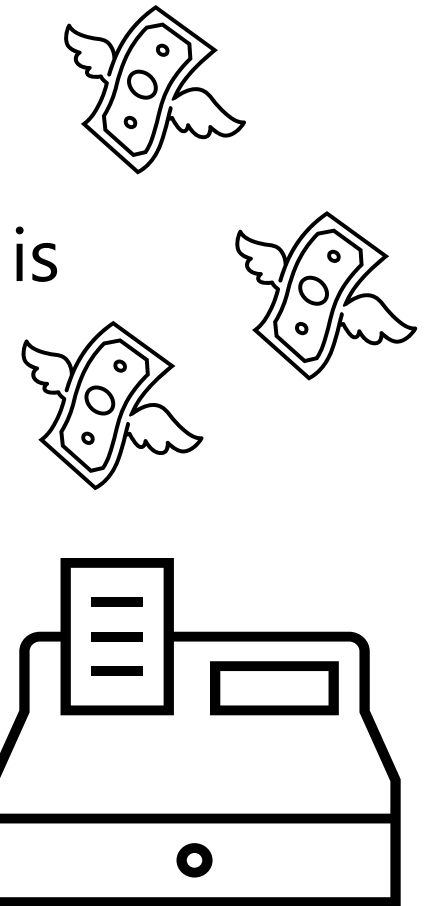
Rule of Thumb

- When starting out, code at a **low level of inference**

  - Keeps coded items discrete from one another

  - Avoids the unreliability involved when (multiple) coders make too many value judgments about how to classify items

- Codes used later in the analytic process can be at a **higher level of inference** or abstraction

Drawing and Verifying Conclusions

On Interpretation

- Analysis does not end once coding is done

- Findings must be interpreted. This involves:

  - Answering "why" questions

  - Attaching significance to results

  - Putting patterns into analytic frameworks
    - Framework might focus on processes, issues, questions, sensitizing concepts

-Patton, 2015

Analysis Process Example: The Wild Kingdom

Categorizing

Coding

Conceptual-izing
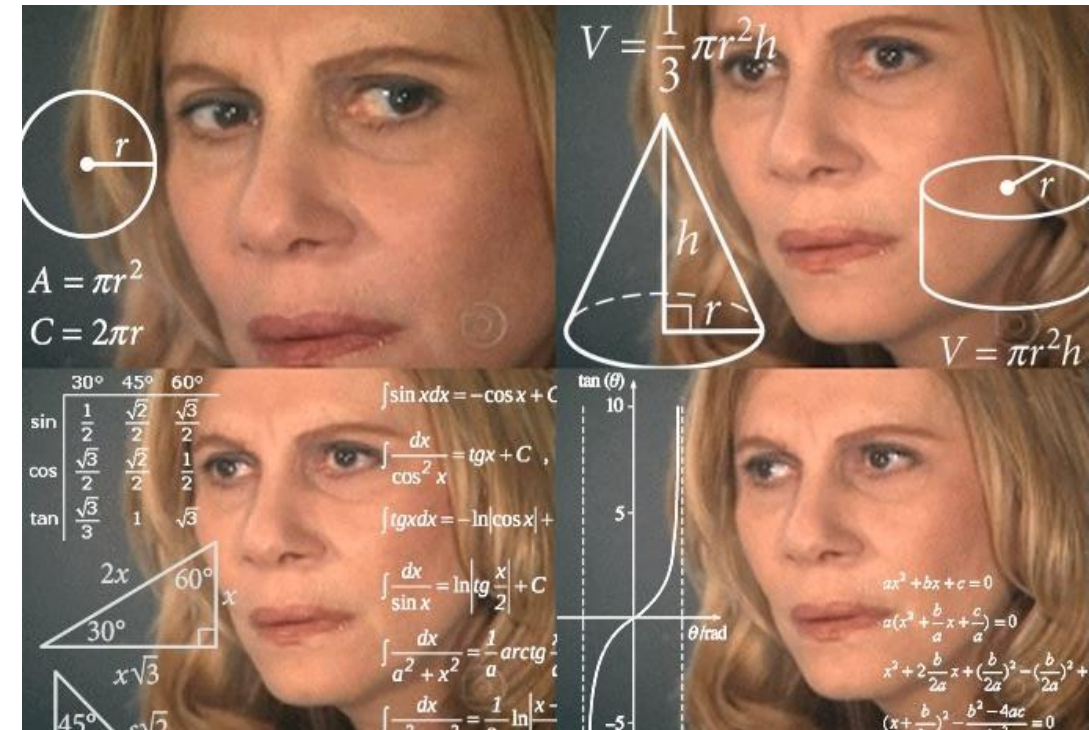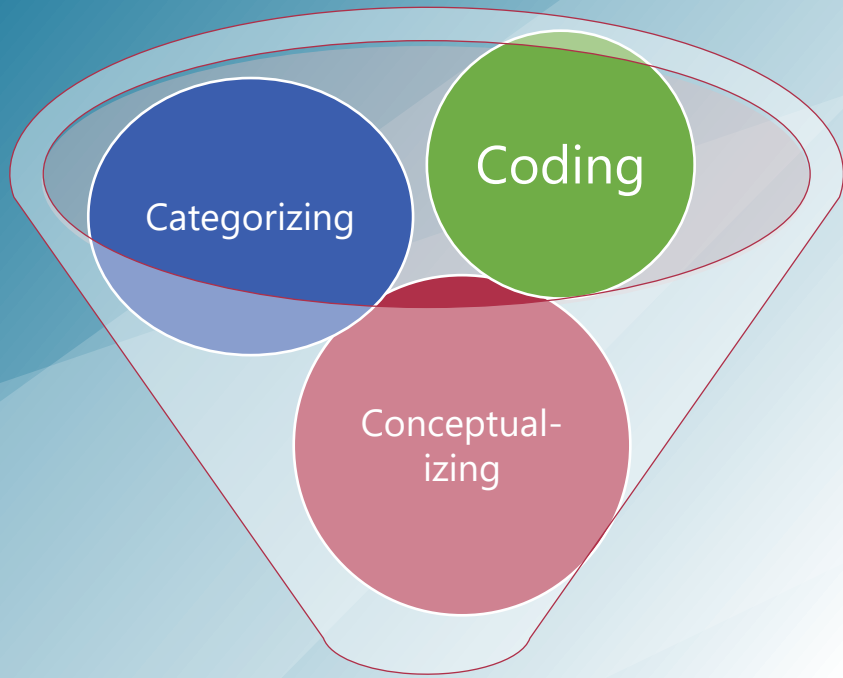
Interpreting

Analysis Process Example: The Wild Kingdom
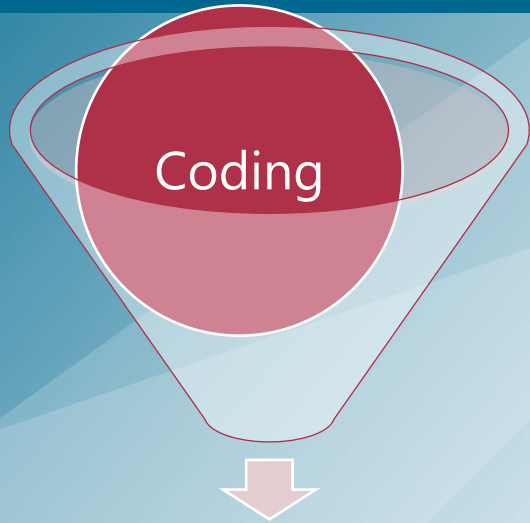
Coding

Codes:
- "animals- vertebrates"
- Fur
- Scales
- 2 eyes
- 4 legs
- Live birth
- Eggs
- Horns
- Ear size/location
- Different sizes
- Feed young milk
- Beady eyes
- Cold blood
- Warm Blood

Analysis Process Example: The Wild Kingdom

Coding

Categori-zing

Categories:
- Fur & beady eyes
- Fur & eat only grass
- Fur & eat meat
- Scales
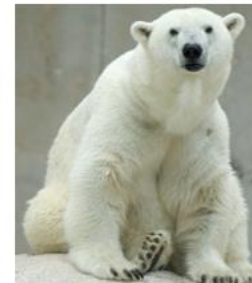- Warm blooded
- Cold-blooded
- Feed babies milk
- Live birth or eggs

Codebook:
- Fur
- Scales
- 2 eyes
- 4 legs
- Live birth
- Eggs
- Horns
- Ear size/location
- Feed young milk
- Different sizes
- Beady eyes
- Cold or warm blood

Analysis Process Example: The Wild Kingdom

Coding

Categorizing

Conceptualizing
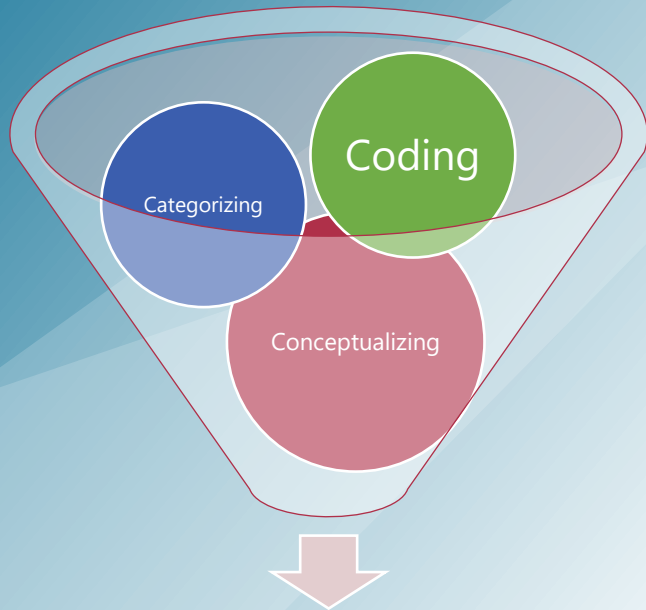
Interpretation:

- We can use several of the characteristics that distinguish the animals across the entire dataset to cluster this dataset of vertebrates.

Themes:

Warm-blooded vertebrates
  Have fur
  Feed babies milk
  Have live births

Cold-blooded vertebrates
  Have scales
  Don't feed babies milk
  Reproduce via eggs

Subphylum Vertebrata Class Mammalia
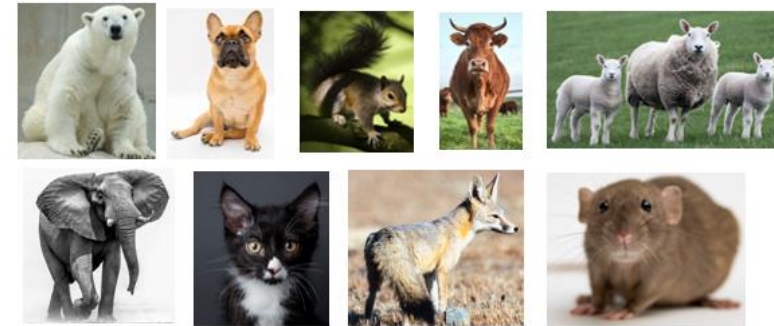
Subphylum Vertebrata Class Amphibia

Subphylum Vertebrata Class Reptilia

Finding Meaning in Qualitative Data

- Answering the "why" requires
  - Knowledge of the topic
  - Careful and repeated reading of the transcripts
  - Consultation with experts
  - Triangulation with other data sources

- Answering the "why" also requires
  - Analysis of what is said (participant response)
  - Looking for what is not said
    - Evasions, re-directed responses, unspoken cues, emphasis on related content

I said what I meant, and I meant what I said!

Finding Meaning: Layered Interpretation Process Example

Steps of Layered Interpretation Process:

1. Literal interpretation (paraphrase quote)
2. Summary interpretation
3. Unspoken meanings
4. Triangulation

"[We had] an analysis done of the number of providers, for example, that could provide MAT. And what it looked like is we had enough providers, but what we didn't really look at is some people got certified to provide MAT for that one patient that needed it. They're not providing that to the community. They don't have a MAT program. And in rural [state], access to services is not just, is there a provider it's, can you get to the provider? Can you get into the provider? Do you have transportation? Do you have to drive two hours to see a provider that's access to services? And that's a huge need in here." (9/14/22)

* MAT= Medication assisted treatment

Finding Meaning: Layered Interpretation Process Example

Steps of Layered Interpretation Process:

1. Literal interpretation (paraphrase quote)

2. Summary interpretation

3. Unspoken meanings
   1. Read entire transcript
   2. Look for contextual clues
   3. Consider what participant is suggesting by <u>how</u> they respond to the interview prompt
   4. If included, look at pauses, vocal tics, other non-verbal responses that are inconsistent with the participant's speech patterns

"[We had] an analysis done of the number of providers, for example, that could provide MAT. And what it looked like is we had enough providers, but what we didn't really look at is some people got certified to provide MAT for that one patient that needed it. They're not providing that to the community. They don't have a MAT program. And in rural [state], access to services is not just, is there a provider it's, can you get to the provider? Can you get into the provider? Do you have transportation? Do you have to drive two hours to see a provider that's access to services? And that's a huge need in here." (9/14/22)

* MAT= Medication assisted treatment

Finding Meaning: Layered Interpretation Process Example

Steps in the Layered Interpretation Process:

1. Literal interpretation (paraphrase quote)
2. Summary interpretation
3. Unspoken meanings
4. Triangulation
   1. Within and across comparison
   2. Existing literature
   3. Other data sources

I only answered half the questions and left a trail of breadcrumbs …

I was happy to help them, but I don't think I answered their questions very well.

I was not comfortable with some of the questions, so I just pretended my internet was bad.

Questions for Determining Meaning in Findings

- How solid, coherent, and consistent is the evidence in supporting the findings?

- To what extent and in what ways do the findings deepen our understanding of what's being studied?

- To what extent are they consistent with existing knowledge?

- To what extent are they useful for some intended purpose (i.e., informing implementation, evaluation, theory, policy, etc.)?

-Patton, 2015

Rigor and Qualitative Research

On Interpretation

- Goes beyond description

- Entails good grasp of background issues and theory, in addition to solid grounding in data and lots of reflexivity

- Interpretation that enhances <u>credibility</u> involves:

  - Investigating rival explanations

  - Accounting for disconfirming evidence

  - Accounting for data irregularities

  - Undertaking triangulation

-Patton, 2015

Standard 1: Credibility/Authenticity

- Relative neutrality and reasonable freedom from unacknowledged research biases
  - Are the methods and procedures described in explicit detail? (referential adequacy)
  - Were competing hypotheses or rival conclusions considered? (negative case analysis)
  - Are the data available for others to reanalyze? (referential adequacy)
  - Prolonged engagement, persistent observation, and triangulation
  - Peer debriefing and researcher reflexivity of personal observations and biases

-Lincoln & Guba, 1985; Miles, et al., 2020

Standard 2: Dependability/Auditability

- Process for doing the study is consistent over time and across researchers and methods
  - Are research questions and study design congruent?
  - Did team members undertake data collection and data quality checks in a comparable fashion?
  - Do the findings converge across data sources and/or data collectors and analysts?
  - Did peer review occur?
  - Is there a clear audit trail that can retrace every decision made throughout the research process?

-Lincoln & Guba, 1985; Miles, et al., 2020

Standard 3: Confirmability/Objectivity

- Do the conclusions depend on the data collected and the questions asked?

- Is there a reliable audit trail?

- Are there relevant and well-described examples illustrating the findings?

- Are rival conclusions reasonably ruled out?

-Lincoln & Guba, 1985; Miles, et al., 2020

Standard 4: Transferability/Fittingness

- Broader importance of the findings
    - Are the sample and setting sufficiently described to allow comparison with other similar contexts?
    - Is sampling strategy appropriate to the question?
    - Is the sample theoretically diverse enough to encourage broader applicability?
    - Is there enough "thick description" to assess for potential transferability to other populations or settings?
    - Do processes and outcomes discussed "fit" other places?

-Lincoln & Guba, 1985; Miles, et al., 2020

Standard 5: Utilization/Application

- Implications of the study for researchers, participants, and potential users
  - Who benefits? Who is harmed?
  - What is the "So what" value?
  - Are the findings supposed to lead to more positive and constructive action?
  - Are the findings accessible to potential users?

-Miles, et al., 2020

Doubting Toms
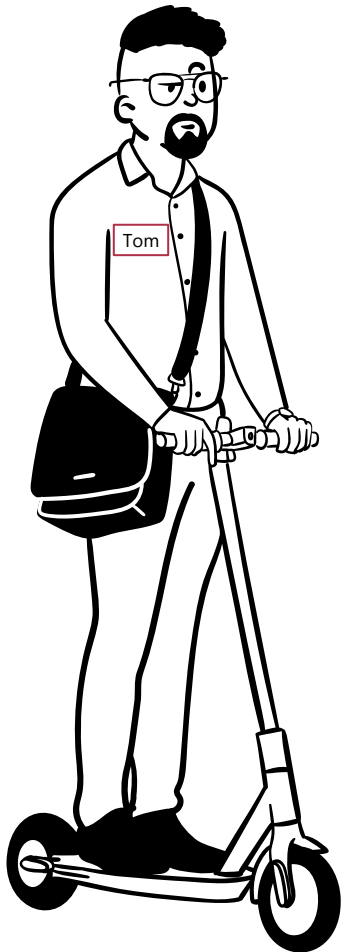
- Whereas statistical analysis follows formulas and rules, qualitative analysis depends on the insights and conceptual capabilities of the analyst (despite all efforts to undertake a highly structured coding process)

- Some researchers view qualitative findings with suspicion, reasoning that the analyst has shaped findings according to their predispositions and biases

- To counter misgivings, try making your predispositions and biases explicit, be up front about your epistemological/theoretical orientation(s), and move on!

-Patton, 2015

Examples of Qualitative Analyses

Classic Thematic Analysis

Use a **constant comparative approach** to identify themes

1. Have coder(s) read through the fieldnotes/transcripts to get a sense of their content.
2. Using both inductive and deductive coding
   - Assign codes to segments of text ranging from a few words to several paragraphs based a priori on questions and topics addressed in guide/fieldnotes (deductive)
   - Open coding to identify not previously considered (inductive)
3. Focused coding to determine which issues recur or represent unique or unusual concerns
4. Group codes with similar content or meaning into broader themes
   - Generate groups, creating a detailed outline describing and linking codes to each theme
5. Review with research team and collectively identify and resolve discrepancies
6. Confirm findings
   - Do member checking, discussion of summary reports of key themes with community partners, triangulation with other data sources, etc.

-Corbin & Strauss, 2008; Glaser & Strauss, 1999

RADaR Technique

- **R**igorous and **A**ccelerated **Da**ta **Re**duction technique
  - Start with dissemination product in mind
  - Iterative process of compiling, organizing, and reducing data through a series of tables
  - Team-based process enhances the rigor
  - Preserves quotes
  - Quickly moves analysts to material for the final product

-Watkins, 2017

RADaR Technique

1. Ensure all data transcripts are formatted similarly

2. Place formatted data transcripts into an all-inclusive, phase 1 table

3. Reduce data in all-inclusive data table to produce a phase 2 data table

4. Reduce data in phase 2 table to produce more data tables

5. Draft the project deliverables using the final phase of the data table

-Watkins, 2017

Framework Method

Tool for supporting thematic analysis and comparison within and between cases

Facilitates structured overview and summary of large data sets

Helpful for multidisciplinary teams and engaging non-experts in analysis and interpretation of data

-Gale et al., 2013

Framework Method

1. Transcription
2. Familiarization
3. Coding
4. Develop working analytical framework
5. Apply the analytical framework
6. Chart data into the framework matrix
7. Interpret

-Gale et al., 2013

Joint Display Analysis

- Joint displays organize analyses in a table, matrix, or figure that…
  - Can be used to represent juxtaposed data collection or findings of study's qualitative and quantitative strands
  - Includes or implies specific linkages or areas of commonalities across the strands that can be expressed as constructs or domains
  - Contains an interpretation (meta-inferences) about the meaning of two types of results when considered together

- Joint display analysis is the iterative process of finding linkages between qualitative and quantitative constructs and organizing and reorganizing results

- Can yield new ways of thinking about, interpreting, and presenting data

-Fetters, 2020; Fetters and Guetterman, 2020; Creswell and Plano Clark, 2018

Joint Display Analysis

Qualitative Data Collection Sources	Qualitative Data Findings Sources	Connect	Quantitative Data Findings Sources	Quantitative Data Collection Sources
Interviews Leadership support Community resources Challenges in leading the team **Focus Groups** Experience as part of a team Challenges in implementing practices **Observations**	**Themes** Lack of community resources COVID-19 pandemic and public health measures Community pushback District level control of policy Leadership Support		**Survey Items** Idealized Influence Working with local LGBTQ+ services Practices implemented Finding job rewarding School building open for community use	**Survey Domains** Leadership Burnout Collaborating with the community Current practices

Collaborating With Community Scale	Illustrative Quotes	Meta-inferences
Significant increase in working with local LGBTQ services, programs, and organizations.

Significant decrease in "school opens its building for community use after school hours." | "We really started putting in the big push on training, believe it or not, all those trainings that I told you about occurred, we did January—it's all been January, February, and March because once we went into COVID everything stopped." (Interview #0104104)

"The Transgender Resource Center has been a big resource for our club as well as there's a big strong GSA at the middle school right next door and their advisor has been a huge asset" (Interview #1160404) | Schools were making strides in connecting with local LGBTQ+ programs and resources to support training and student organizations. Despite considerable disruption during the pandemic, they were still able to make significant changes in their connection and use of those resources. However, some aspects of collaborating with the community that were directly impacted by public health measures (like use of school buildings) were hampered. |

Goal of Completing Reports

Letting others know what you learned and how you learned it

-Miles et al., 2020; Patton, 2015

"Unless one decides to write a relatively disconnected report, he must face the hard truth that no overall analytic structure is likely to encompass every small piece of analysis and all the empirical material that one has in hand…."

-Loftland, 1971

Telling the Story of Qualitative Data

"Writing is not an innocent practice, it is a form of pedagogy, a way of making the world visible. Writing is simultaneously a method of discovery, a method of interpretation, and a method of analysis."   -Denzin, 2014
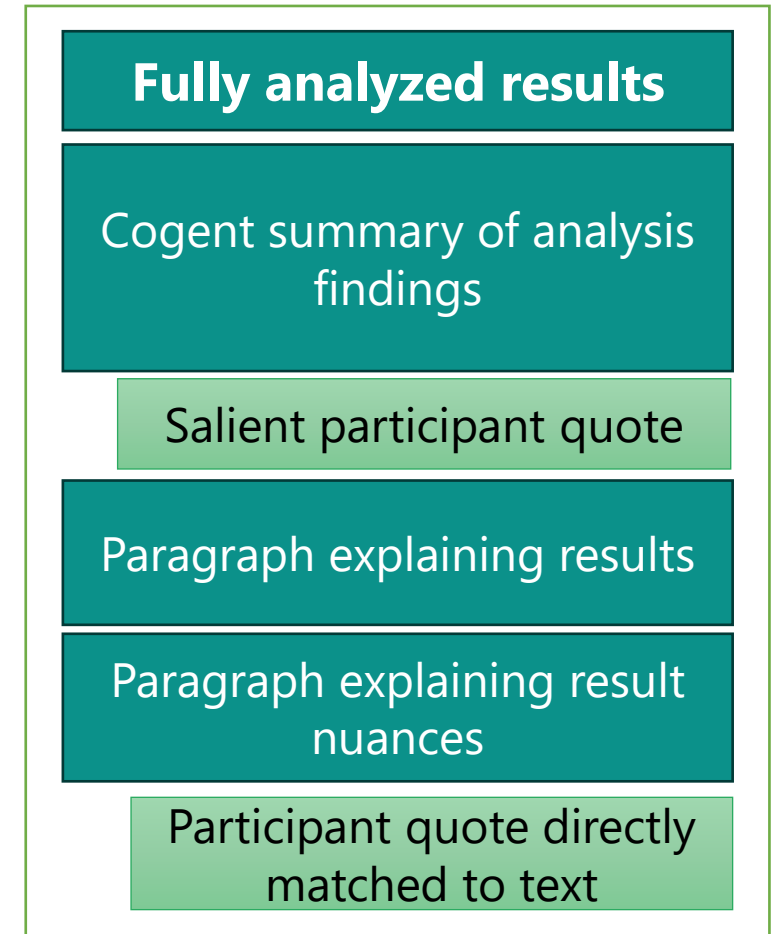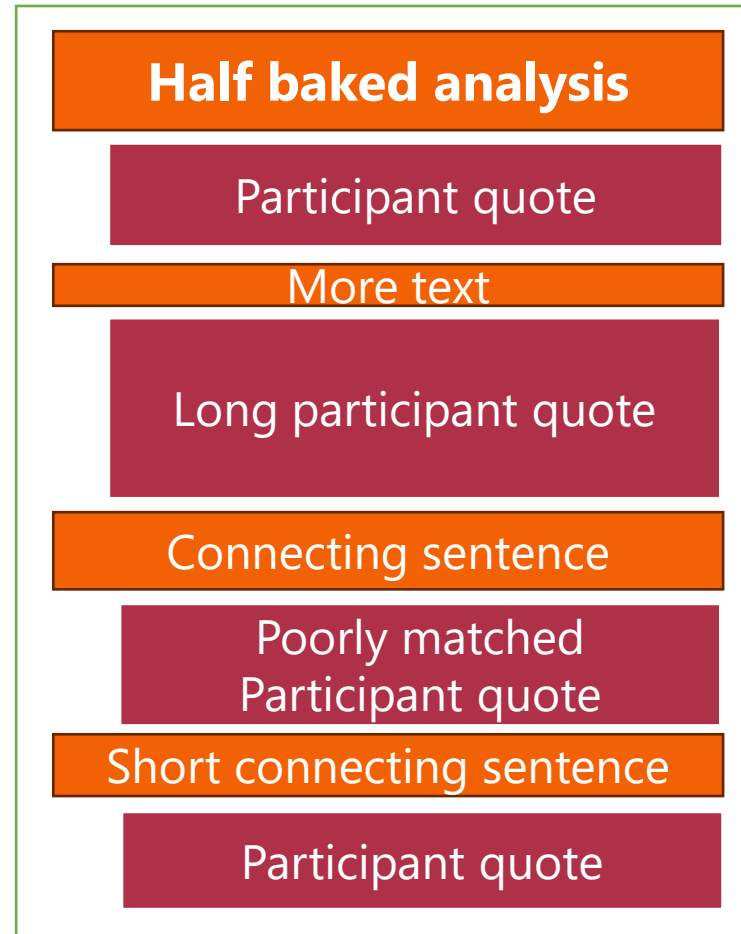
- Reporting research results places researcher in a position of power
  - Must have reflexive praxis, recognize position and relationship to research and potential results/outcomes
  - Recognize the role in speaking *for* or *on behalf of* research participants
  - Is the story meaningful?
  - Is the voice of the researcher present? There is no omniscient third person or passive voice in qualitative writing

-Patton, 2015

Description and Quotation

- The best qualitative writing tells a story about the research
- As with all narratives, a good story has:
  - Rich description that enables the reader to enter the situation
  - Helps the reader build an understanding of the thoughts of the people represented in the report
- Does not include too much detail in description
  - Avoid including detail that is trivial or mundane
- Provides select examples (participant quotes) to illustrate results

Description and Quotation

- A half-baked analysis is easily identified because the report is a series of participants' quotes strung together with connecting sentences

- Fully analyzed results will provide a summary of the results with a few well-selected participant quotes

Half baked analysis

Participant quote

More text

Long participant quote

Connecting sentence

Poorly matched Participant quote

Short connecting sentence

Participant quote

Fully analyzed results

Cogent summary of analysis findings

Salient participant quote

Paragraph explaining results

Paragraph explaining result nuances

Participant quote directly matched to text

-Patton, 2015

Description and Quotation

- Avoid Mismatch

  Problems disseminating information via email emerged, as only select stakeholders, such as upper-level administrators, received electronic messages, and could not be relied upon to forward them on to others involved in implementation. Inadequate communication led some stakeholders to express concern that their interests in the ChildrenFirst implementation process were not being met. **One manager explained, "And our...so our donors, as I say, philosophically agree with that what we're doing is the right thing. We're going to need to start showing results in this fiscal year before we really know where we are with things."**

Description and Quotation

- A better quote may have been:

    A frontline worker stated, "Our bosses have their pipelines and they know what's going on, but then it's assumed that what they know will hit the street.... It doesn't happen that way! And then our ability to perform our jobs well gets undermined."

Use of Metaphors and Analogies

- Powerful ways of connecting with readers

- Can be a clever way of communicating findings

- Metaphors derive from the data; they should not be manipulated to fit the data

- Enable you to synthesize large blocks of data into a single trope

    - Examples: "The train has left the station. It's time to get on board." "We picked the low-hanging fruit."

- Be thoughtful with cultural associations, outdated or inappropriate sayings, and metaphors

"Traditional Qualitative Report" Guidelines

- Explain what the study was about

- Communicate a clear sense of the context, or the setting in which data were collected

- Offer a "natural history of the inquiry," so readers knows what was done, by whom, and how

- Provide basic data in focused form (via vignettes, organized narratives, or data displays), so reader and researcher can agree upon conclusions

-Miles et al., 2020

Sharing Research Results

Community Partners
- Newsletters
- Radio or community television (weekend morning shows)
- Social media
- Host neighborhood meetings, coffee hours, open houses
- Visit with local leaders, church groups, other key demographic groups

Academic Partners
- Peer-reviewed academic journals
- Professional meetings
- Presentations within university departments/units
- White papers

Policy Makers
- Policy briefs
- Outreach to local elected leaders to help educate on issues
- Engage with special interest groups
- Invite to community outreach meetings

The Best Way to Learn to Write about Qualitative Research

…is to **read** qualitative research!

Check out:

- Medical Anthropology Quarterly
- Medical Anthropology
- Qualitative Health Research
- Most mainstream evaluation and implementation science journals
- Contemporary ethnographies

If you wanna play jazz, you gotta listen to jazz!!!

Notes on PowerPoint

- Use is expected in health services research

- Too much reduction into tidy bullet points decontextualizes data

- Large chunks of quoted text are visually unappealing

- Presenter must know the material well

- Extemporaneous narrative can confound or result in faulty interpretation

- Consider selecting a sub-segment of data to present

For More Information….

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