DR. SAIDATUL NURUL HIDAYAH JANNATUN NAIM NOR AHMAD

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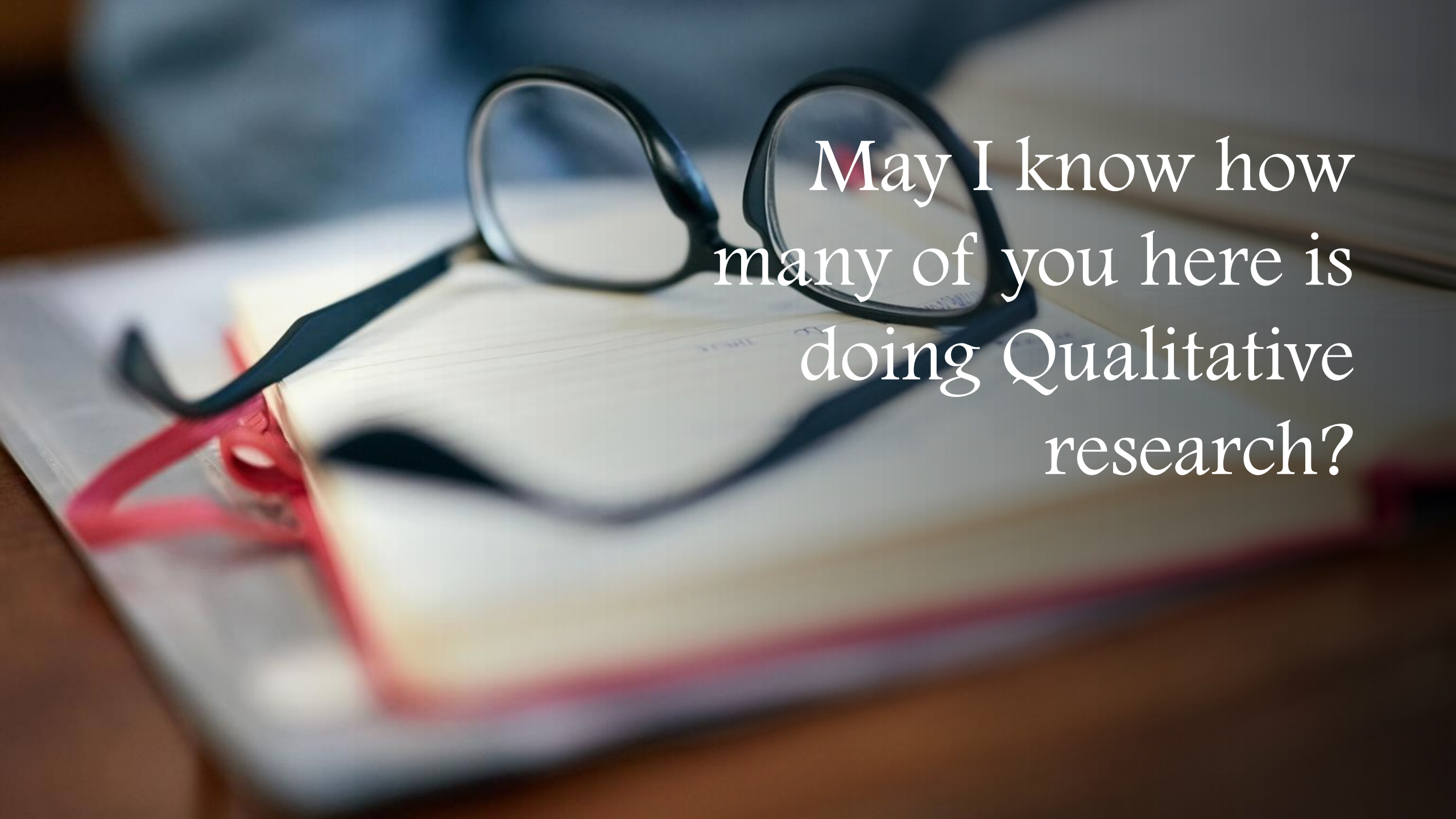# INTRODUCTION TO QUALITATIVE DATA ANALYSIS WITH NVIVO

OUTLINE

 WHAT IS QUALITATIVE RESEARCH?

 HOW DO WE USE NVIVO IN ANALYZING QUALITATIVE DATA?

Before we begin…

- Please install NVIVO Trial Version via this link: https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/try-nvivo

May I know how many of you here is doing Qualitative research?

What is Qualitative Research?

"… an interpretive **naturalistic approach** to the world. This means that qualitative researchers **study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people** bring to them."

Denzin and Lincoln (2005: 3)

"Development of concepts which help us to **understand social phenomena** in natural settings (rather than experimental), giving due emphasis to the **meanings, experiences and views of the participants**."

Pope and Mays (1995)

☐ **Understanding Context**

How economic, political, social, cultural, environmental and organisational factors influence phenomenon?

☐ **Understanding People**

How people make sense of their experiences of social phenomenon?

☐ **Understanding Interaction**

How the various actors involved interact each other?

QUALITATIVE vs QUANTITATIVE RESEARCH

Point of comparison	Qualitative research	Quantitative research
Focus of research	Quality (nature, essence)	Quantity (how many, how much)
Philosophical roots	Phenomenology, symbolic, interaction	Empiricism, logical positivism
Associated phrases	Fieldwork, ethnographic, naturalistic, grounded, subjective	Experimental, empirical, statistical
Goal of investigation	Understanding, description, discovery, hypothesis generating	Prediction, control, confirmation, hypothesis testing
Design characteristics	Flexible, evolving, emergent	Pre-determined structure
Setting	Natural, familiar	Unfamiliar, artificial
Sample	Small, non random, theoretical	Large, random, representative
Data collection	Researcher as primary instrument, interviews, observations	Inanimate instruments (scales, tests, surveys, questionnaires, computers)
Mode of analysis	Inductive (by researcher)	Deductive (by statistical methods)
Findings	Comprehensive, holistic, expansive	Precise, narrow, reductionistic

Adapted from Merriam, 1989; Yin, 1995.

Research Paradigm

Ontology

Objective   Subjective

Epistemology

| Positivist | Critical Realist | Action Research | Interpretivist |

Data Gathering

Methodology

Quantitative   Case Study   Qualitative

Techniques

Big Data	Interviews	Archives
Experiments	Observation	Physical Artefacts
Surveys	Focus Groups	Oral History
Netnography	Audio Visual	Ethnography

Data Analysis Approaches

Deductive

EXPLORING RELATIONSHIPS: Correlation analysis; Partial correlation analysis; Multiple regression analysis; factor analysis

COMPARING GROUPS: t-test; ANOVA; MANOVA; ANCOVA

Structural Equation Modelling

Inductive

Template Analysis

Thematic Analysis

Discourse Analysis

Hermeneutics

Grounded Theory

QUALITATIVE RESEARCH CHARACTERISTICS

- Natural setting

- Researcher as key instrument of data collection

- Multiple methods

- Complex reasoning through deductive and inductive

- Focus on participants' meanings

- Emergent design

- Reflexivity

- Holistic account

Creswell 2013:45~47

GETTING STARTED?

- Have you just conducted a qualitative study involving…

- Interviews

- Focus Groups

- Observations

- Document or artifact analysis

- Journal notes or reflections?

Once you have collected data, what do you do with it?
When do you begin data analysis?

The Danger…

You have undermined your entire project by waiting until after all the data are collected before beginning your analysis (Merriam, 2009: 170).

When do you begin data analysis? NOW!

Analysis not left until the end

Qualitative Data Analysis

- The process of turning written data such as interview and field notes into findings: to **explain, understand or interpret social phenomenon** (people and situations) from the information gathered.

- QDA is usually **based on an interpretative philosophy**.

- The idea is to **examine the meaningful and symbolic content** of qualitative data.

- Le Compte and Schensul (1999) define analysis as the process a researcher uses to reduce data to a story and its interpretation.

STEPS IN QUALITATIVE DATA ANALYSIS

Miles and Huberman (1994) Three Stages in Qualitative Data Analysis:

1.Data reduction

2.Data display

3.Conclusion drawing/verification

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┌─────────────────┐     ┌─────────────────┐     ┌─────────────────────┐
│ Record data &   │     │ Triangulate data│     │ Make conclusions &  │
│ prepare memos   │─────│ sources         │─────│ recommendations,    │
│                 │     │                 │     │ Prepare draft report│
└─────────────────┘     └─────────────────┘     └─────────────────────┘
         │                       │                         │
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────────┐
│ Label & archive │     │ Interpret       │     │ Seek feedback &     │
│ data            │     │ findings,       │     │ validation          │
│                 │     │ access          │     │                     │
│                 │     │ contribution    │     │                     │
│                 │     │ & summarize     │     │                     │
└─────────────────┘     └─────────────────┘     └─────────────────────┘
         │                       │                         │
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────────┐
│ Review          │     │ Identify &      │     │ Communicate         │
│ objectives      │     │ summarize       │     │ findings            │
│                 │     │ themes          │     │                     │
└─────────────────┘     └─────────────────┘     └─────────────────────┘
         │                       │                         │
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────────┐
│ Analyse         │     │ Carefully read  │     │ Implement           │
│ contextual &    │─────│ data & begin    │     │ recommendations &   │
│ demographic data│     │ coding          │     │ make                │
│                 │     │                 │     │ improvements        │
└─────────────────┘     └─────────────────┘     └─────────────────────┘
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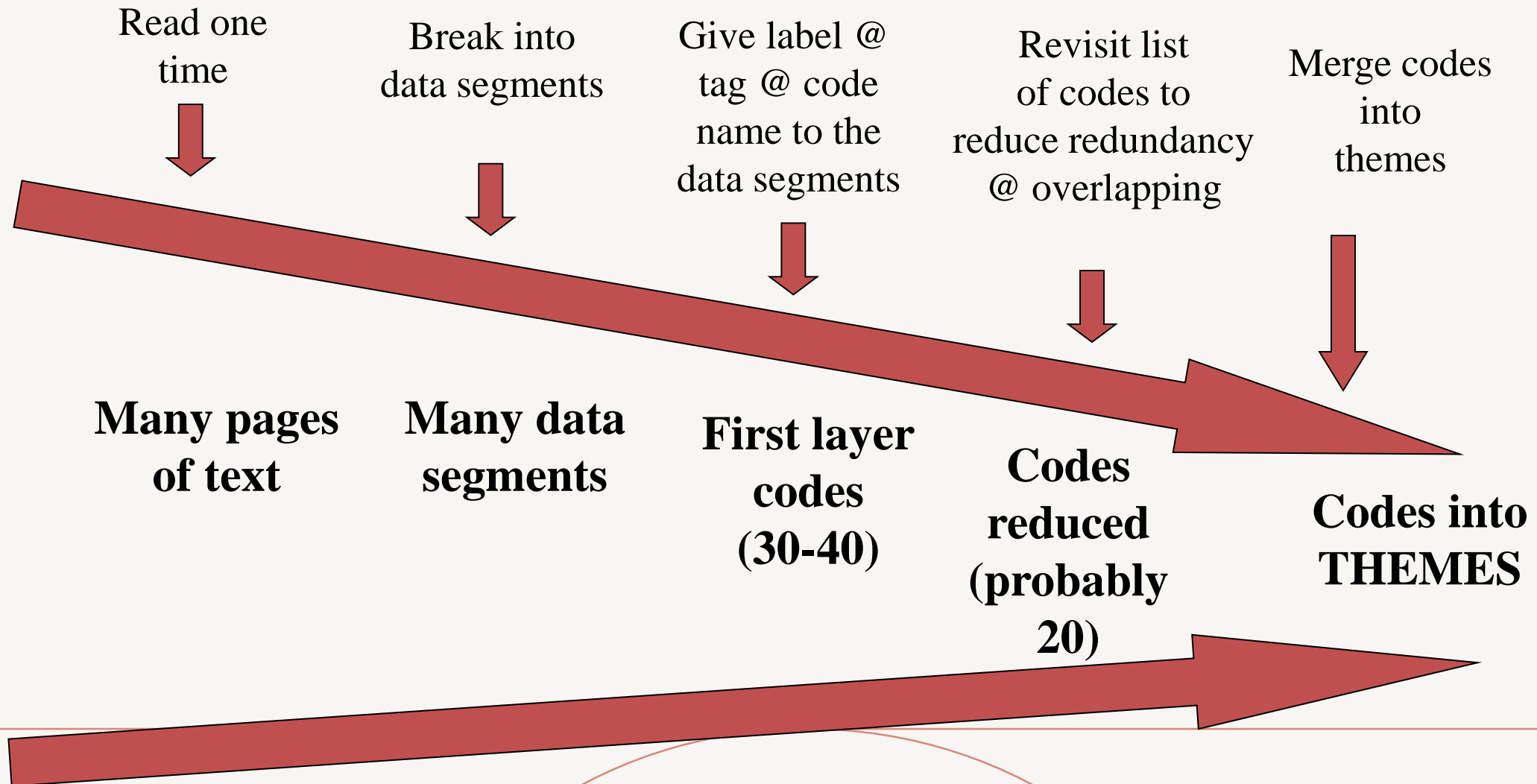
Carefully Read through the Data and Begin Coding

- Coding is the *process of searching data for themes, ideas and categories* and then marking similar passages of text with a code label so that they can easily be retrieved at a later stage for further comparison and analysis.

- Coding is done according to the types of themes and issues that emerge:

    - By coding the data, the researcher can search the data easily to make comparisons and to identify any patterns that require further investigation.

- The process of coding (associating labels with the text, images etc.) involves close reading of the text (or close inspection of the video or images).

- Coding is more than simply organising data:

    - helps the process of data analysing, data interpretation and finding the relationships and patterns in your data.

TIPS WHILE CODING

• Auerbach & Silverstein (2003: 44) recommend that you keep a copy of your research concern, theoretical framework, central research question, goals of the study, and other major issues on one page in front of you to keep you focused.

INDUCTIVE CODING PROCESS

Read one time

Break into data segments

Give label @ tag @ code name to the data segments

Revisit list of codes to reduce redundancy @ overlapping

Merge codes into themes

Many pages of text

Many data segments

First layer codes (30-40)

Codes reduced (probably 20)

Codes into THEMES

DEDUCTIVE CODING PROCESS

Entire
texts

Look for
data segments

Determine
the
Codes

Clear picture
of
the constructs

Begin with
THEMES

**Many pages
of text**

**Many data
segments**

**Smaller
codes
(30-40)**

**Codes
(probably
20)**

**Begin with
THEMES**

Coding Levels

- Descriptive to Interpretative to Pattern Coding
  - Moves from summary to meaning to explanation

- **OR**

- Open to Axial to Selective Coding
  - Moves from initial theory to developing relationships between codes for emerging theory

- **OR**

- First cycle to second cycle coding
  - Moving from describing the data units to inferring meaning

What's the difference between a code and a theme?

- A theme captures a common, recurring pattern across a dataset, clustered around a central organising concept.

  - Demonstrate the theme's patterning in the dataset.

- Codes are more specific than themes.

  - capture a single idea associated with a segment of data

  - consist of pithy labels identifying what is of interest in the data (in relation to the research question)

  - can be conceptualized as the building-blocks that combine to create themes

THEMATIC ANALYISIS

- a method for identifying, analysing, and reporting patterns (themes) within data.

- differs from other analytic methods that seek to describe patterns across qualitative data.

- can be an **essentialist or realist method** (which reports experiences, meanings and the reality of participants) or it can be a **constructionist method** (which examines the ways in which events, realities, meanings, experiences and so on are the effects of a range of discourses operating within society).

Phases of Thematic Analysis: Braun & Clarke (2006)

Phase	Description of the process
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.
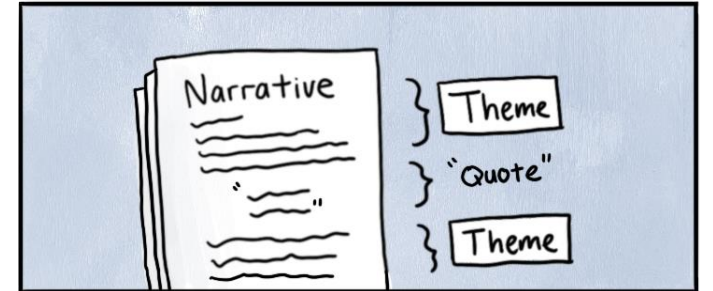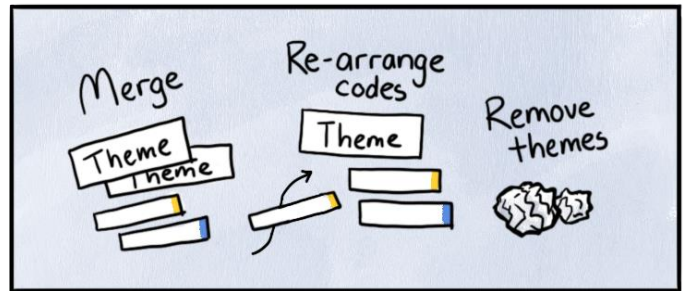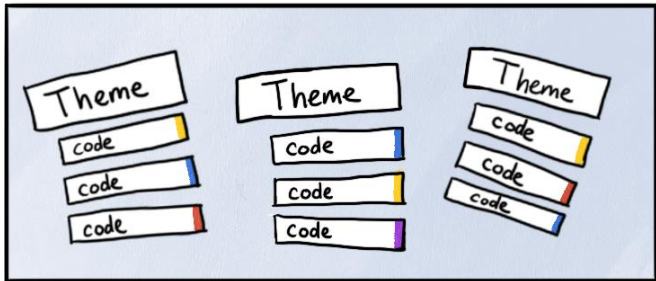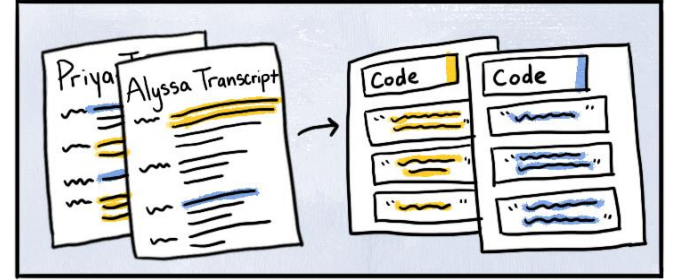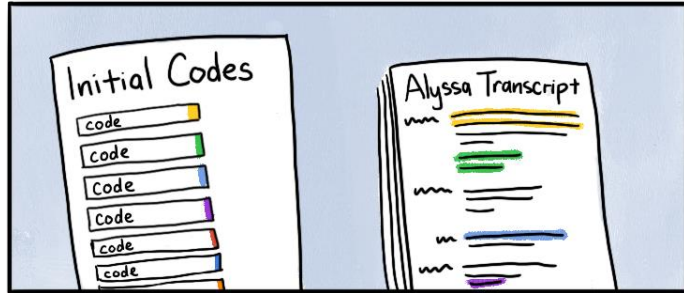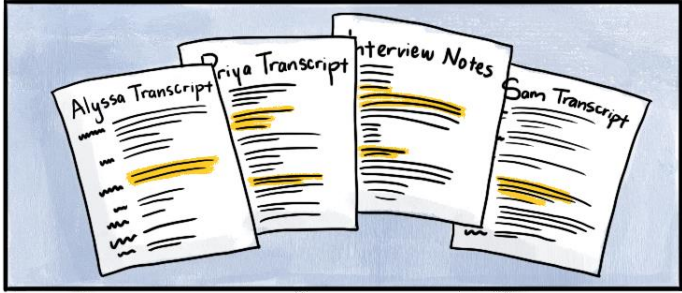
Checklist For A Good Thematic Analysis: Braun & Clarke (2006)

Process	No.	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed – interpreted, made sense of – rather than just paraphrased or described.
	8	Analysis and data match each other – the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organised story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.
Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done – i.e., described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as *active* in the research process; themes do not just 'emerge'.

What is NVIVO and what can it do?

- Software that helps making the analysis process:

  - Organized

  - Transparent

  - Integrated

  - Grounded in the evidence

- **Structure work** – Enables access to all parts of the project immediately

- **'Closeness to data'** interactivity – Instant access to source data files (e.g. interview transcripts)

- **Explore data** – Tools to search text for one word or a phrase **Code and Retrieve Functionality** – Create codes and retrieve the coded sections of text

- **Project Management and Data Organisation** – Manage project and organise data

- **Search and interrogating the database** – Search for relationships between codes

- **Writing tools** – Memos, comments and annotations,

- **Output** – Reports to view a hard copy or export to another package

What are the things that NVIVO cannot do?

NVIVO cannot do the following:

- Analyze the data for you. It is just a tool for indexing the data.

- Produce conclusion on the data.

- Do the analytical thinking (though it can do things that help researcher does that thinking).

- Do the coding. In general, the researcher needs to decide what can be coded in what way. Some software supports automatic coding but it is important to check what has been automatically coded.

- Reduce bias, improve reliability or, on its own, improve the quality of analysis (though it does have functions that can be used to help improve the quality of analysis)

- Tell you how to analyse your data (no-one thinks a word-processor can write a report for them).

- Does not calculate statistics, though some programs will produce simple counts and percentages.

- Write our thesis or research papers! ;-)

BASIC TERMINOLOGY IN NVIVO

| NVivo term	Description	Also known as
Sources	The collective term for your research materials When you import data into NVivo, it becomes an *internal* source. An *external* source represents data outside of NVivo that cannot be imported (such as a book or archival footage).	Data Material Documents Survey Transcript Project items
Node	A virtual container that lets you collect content across sources to group related material together.	Code Theme Category Topic Concept
Coding	The action of assigning source content to a node.	Quotations Analysis Tagging
Classifications	A way to add descriptive information to your sources and cases. Examples Reference, Journal Article, Person, Organization, Location	Types Sorts Classes
Attributes	Aspects of a classification. Examples A case classification of 'Person' might have attributes for age and gender. A source classification of 'Journal Article' might have attributes for publication and author.	Variables Characteristics Tag Metadata Rating Descriptors Demographics Bibliographic
Annotations	Text linked to specific content in a source.	Comments Reminders Observations Footnote Scribbled notes in the margin

OUR TASKS FOR TODAY:

1. PREPARE DATA

2. READ AND UNDERSTAND THE DATA THROUGH EXPLORATION & CODING
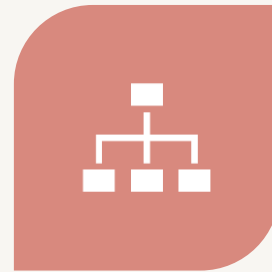
3. PRODUCING OUTPUT AND STRUCTURING THE WRITE UP

4. BACKUP

OK LET'S BEGIN THE HANDS-ON ACTIVITIES!

First step: Aligning RO/RQ+CODES

- WORKING TITLE (SAMPLE): **IMPACT OF SPORTS ON HEALTH**
- PRIORI = DEDUCTIVE

RESEARCH QUESTIONS	INTERVIEW QUESTIONS	CODES
1. What are the sports **activity** normally engaged by sportsmen?	1. What sports **activity** that you do? 2. How often do you do this sports? (**Frequency**)	Act-Badminton Act-Swimming Act-Soccer Act-Bola tampar Frq-Daily Frq-Weekly Frq-Monthly
2. How do sports **impact** on health of sportsmen?	2. How do you think your health is **impacted** by doing sports?	Bft-Physical Bft-Pscyhological Bft-Improved QoL
3. What are the **problems** encountered by sportsmen?	3. Please share any **problems** that you encounter while engaging in sports. 4. How do you **overcome** such problems?	Prb- Sgt-

Step 2: Create New Project in NVIVO

Step 3: Importing Documents to NVIVO

Step 4: Exploring your data

WORD CLOUD/ WORD LIST

TO GET THE GENERAL IDEA ABOUT THE DATA BEFORE BEGIN CODING

Step 5: Begin Coding!

Step 6: Create Output/Report

- Network (Visual)

- Report (Textual)

Demonstrate the credibility of your findings in the following ways:

- If you used NVivo for your literature review, run a query or create a chart to demonstrate how your findings compare with the views of other authors.

- Was an issue or theme reported by more than one participant? Run a Matrix Coding query to see how many participants talked about a theme.

- Were multiple methods used to collect the data (interviews, observations, surveys)—and are the findings supported across these data files? Run a Matrix Coding query to see how often a theme is reported across all your files.

	A : Interview	B : Survey	C : Journal Art...
1 : Habitat	17	7	2
2 : Water quality	32	0	9

Concern about water quality is prevalent in a number of interviews but is not mentioned in survey results. Why?

Step 7: Backup!

Thank you!

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