



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

ECDE 7021

Exploring Contemporary Issues in Education **2: Applying critical skills, contributing to knowledge: leading improvement**

Session 5 : 2nd June 2026

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Trawsnewid Addysg, Trawsnewid Bywydau
Transforming Education, Transforming Lives

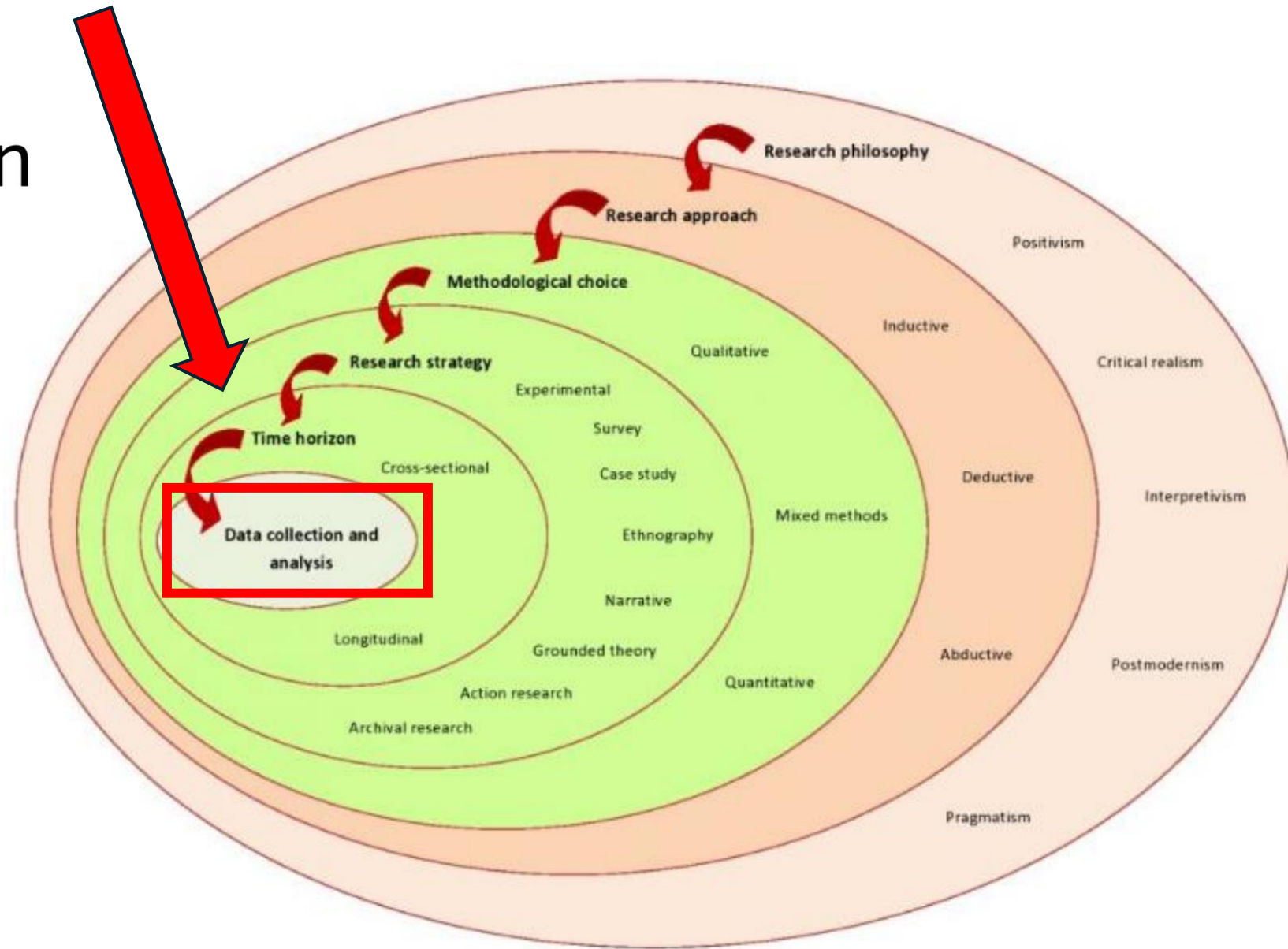
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The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

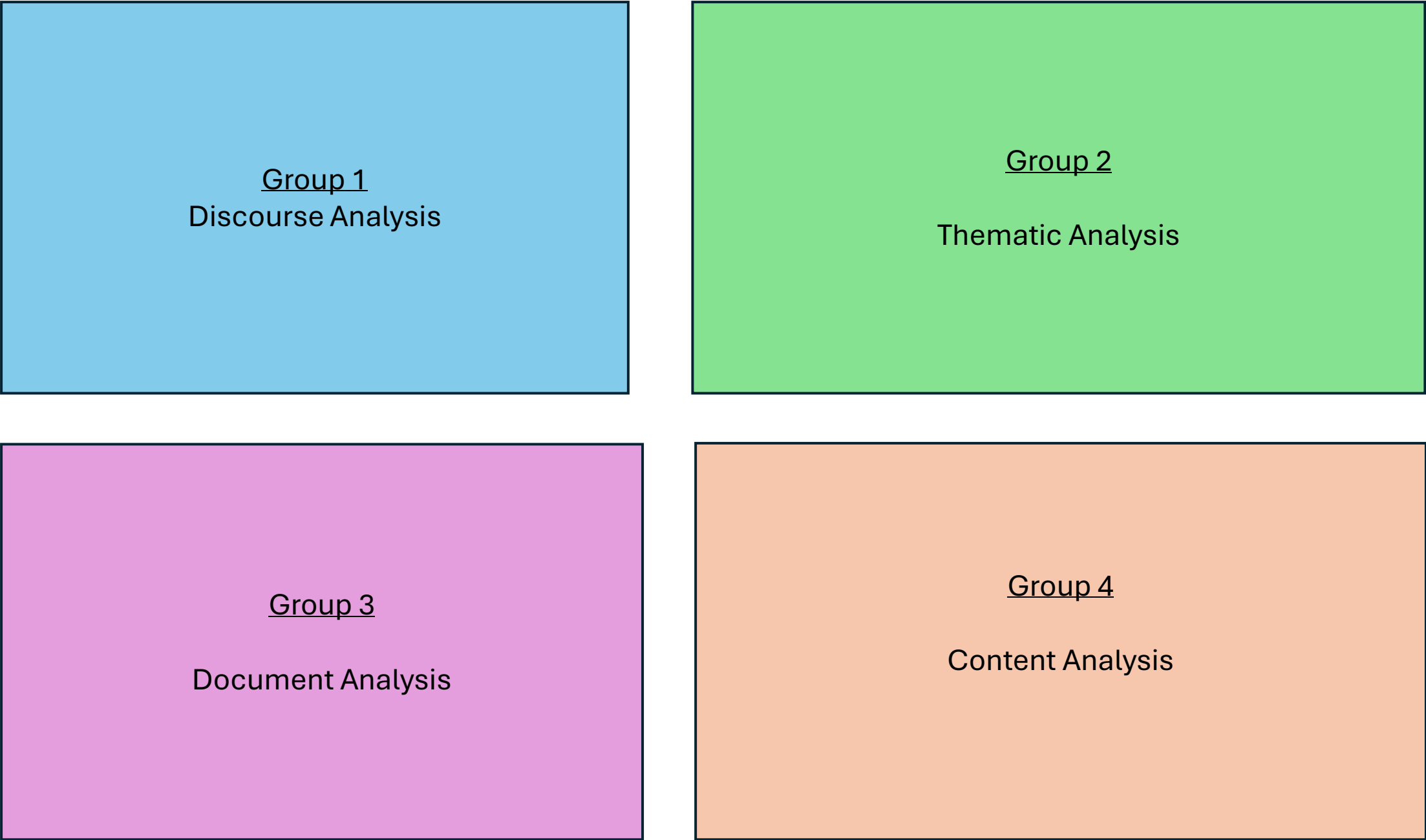
- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



(Saunders et al., 2007)

Fact finding mission:





Group 1
Discourse Analysis

Group 2
Thematic Analysis

Group 3
Document Analysis

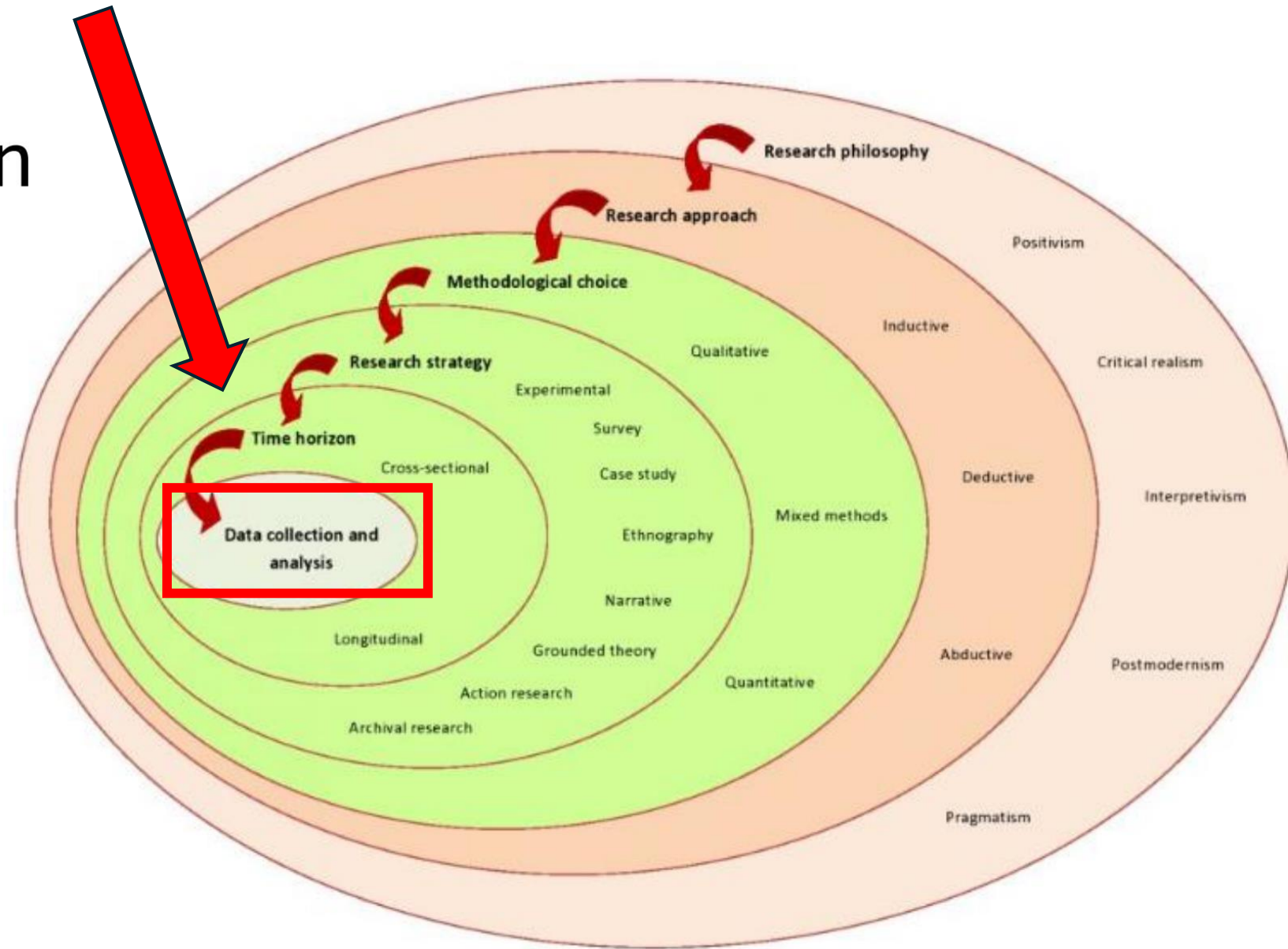
Group 4
Content Analysis

The Research Onion

Start from the outside and peel each layer away until you reach the core.

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- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



(Saunders et al., 2007)

What is the data telling you?

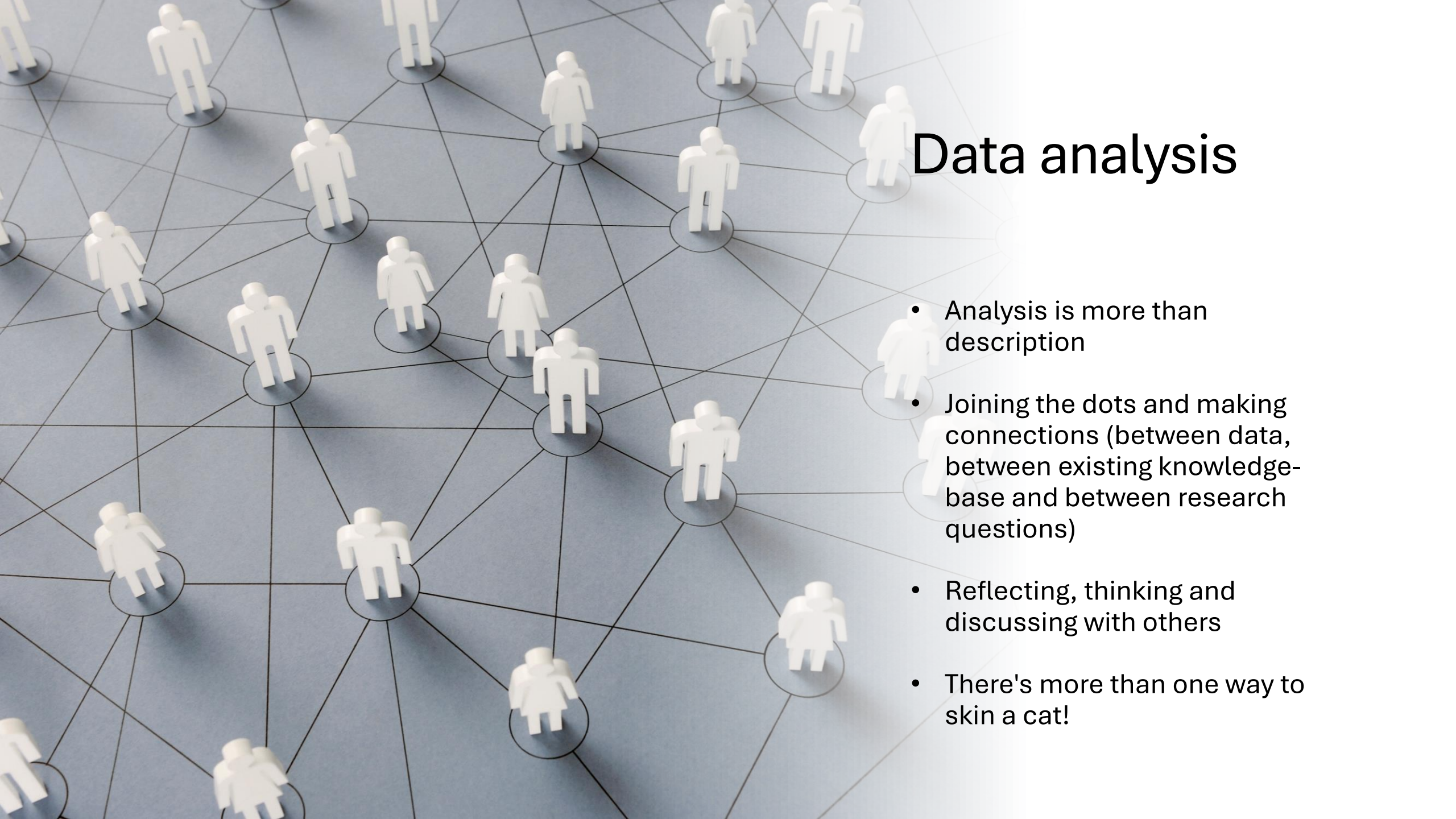
‘...bringing order, structure and interpretation to the mass of collected data. ... It is the search for general statements about relationships among categories of data ... it is the search among data to identify content.’

(Marshall & Rossman, 1999)



Data analysis

- Describe
- Summarise
- Interpret
- Generate themes
- Understand individuals
- Understand groups
- Raise issues
- Demonstrate
- Explore

The background of the slide features a network diagram. It consists of numerous white, stylized human figures of varying sizes, each positioned within a small blue circle. These circles are interconnected by a web of thin, dark grey lines, creating a complex, interconnected network that symbolizes data analysis or a social network. The overall color palette is a mix of light blue, white, and dark grey.

Data analysis

- Analysis is more than description
- Joining the dots and making connections (between data, between existing knowledge-base and between research questions)
- Reflecting, thinking and discussing with others
- There's more than one way to skin a cat!



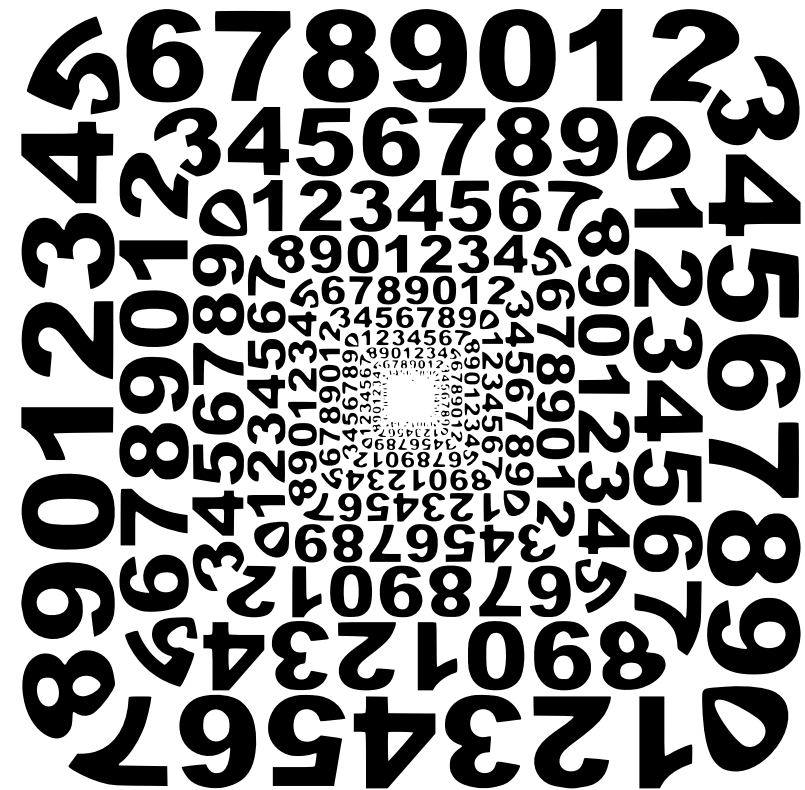
- Can you spot any patterns?
- Nothing is black and white – no data is ‘perfect’
- Data analysis should challenge your thinking – it should make you feel uncomfortable
- Spell out what you find – don’t leave it for the reader to work out
- **It’s your enquiry, and your findings... Take control**

Numbers

Quantitative research is:

‘explaining phenomena by collecting numerical data that are analysed using mathematically based methods.’

(Aliaga & Gunderson, 2000)





Words

Qualitative research is:

‘interested in understanding the meaning people have constructed, that is, how people make sense of their world and the experiences they have in the world.’

(Merriam, 2009)

Quantitative data analysis

1

Once you have collected your data, you will need to enter it into some sort of spreadsheet

2

Give each respondent a unique identifying number (UIN); if you are carrying out your research in several classes, you may want to give each class its own UIN as well

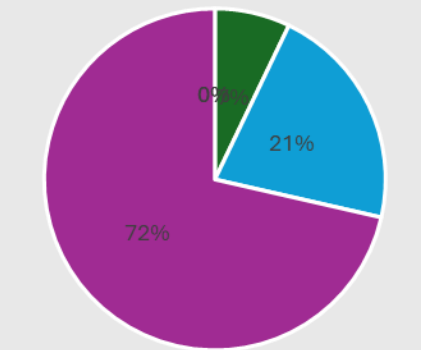
3

Once all the data has been entered, you can use basic statistical techniques to analyse it

Using diagrams or figures

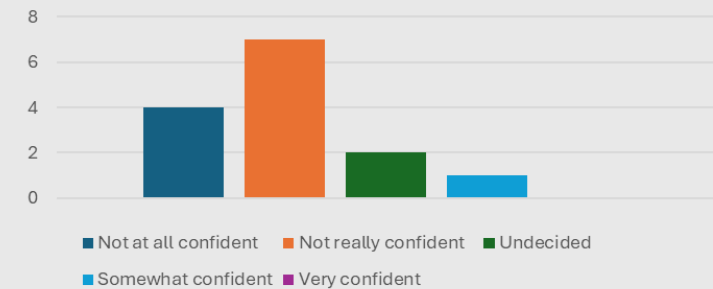
- Consider using diagrams or figures to make your data easier to digest...

To what extent do you believe this project has been a worthwhile exercise for you and your school?



■ Not at all ■ Not really ■ Undecided
■ Somewhat ■ Very much

Thinking back to the start of this project, how confident do you think teachers in your school were in undertaking professional enquiry/action research?



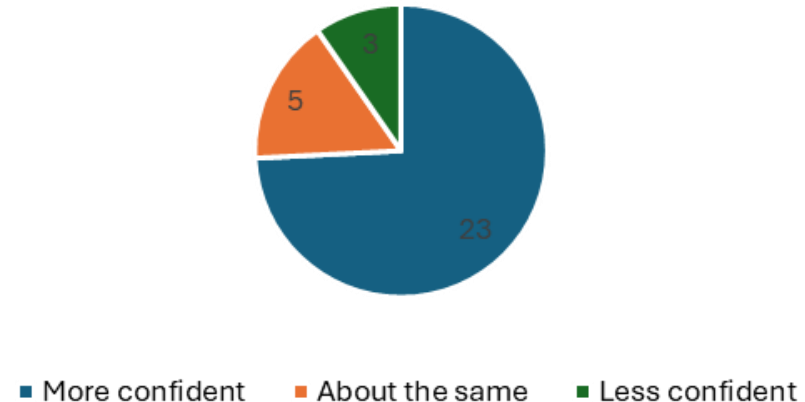
■ Not at all confident ■ Not really confident ■ Undecided
■ Somewhat confident ■ Very confident

Using diagrams or figures

Overall, 23 pupils felt more confident in their use of blended learning technologies, out of a class of 31.

Five pupils said they were about as confident now as they were before, while three pupils felt they were less confident in using blended learning technologies post-intervention.

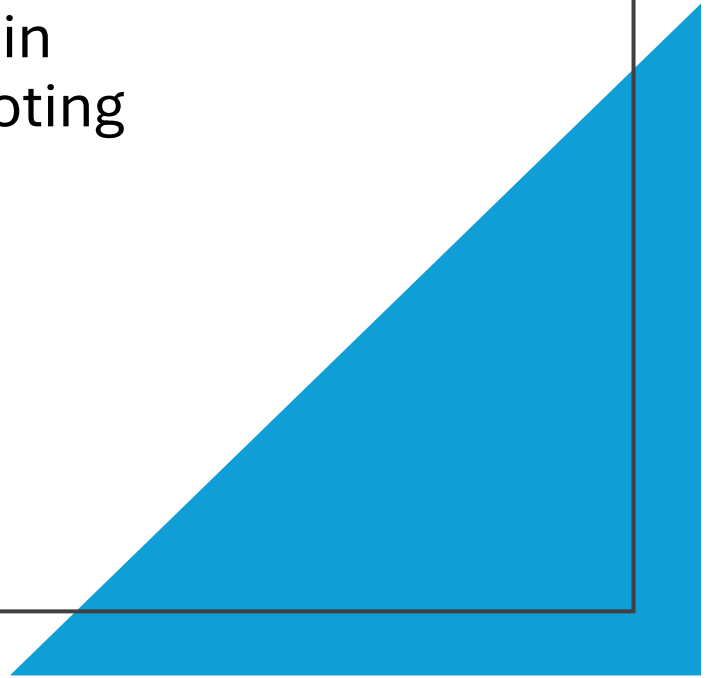
Pupil confidence in blended learning technologies – post-intervention

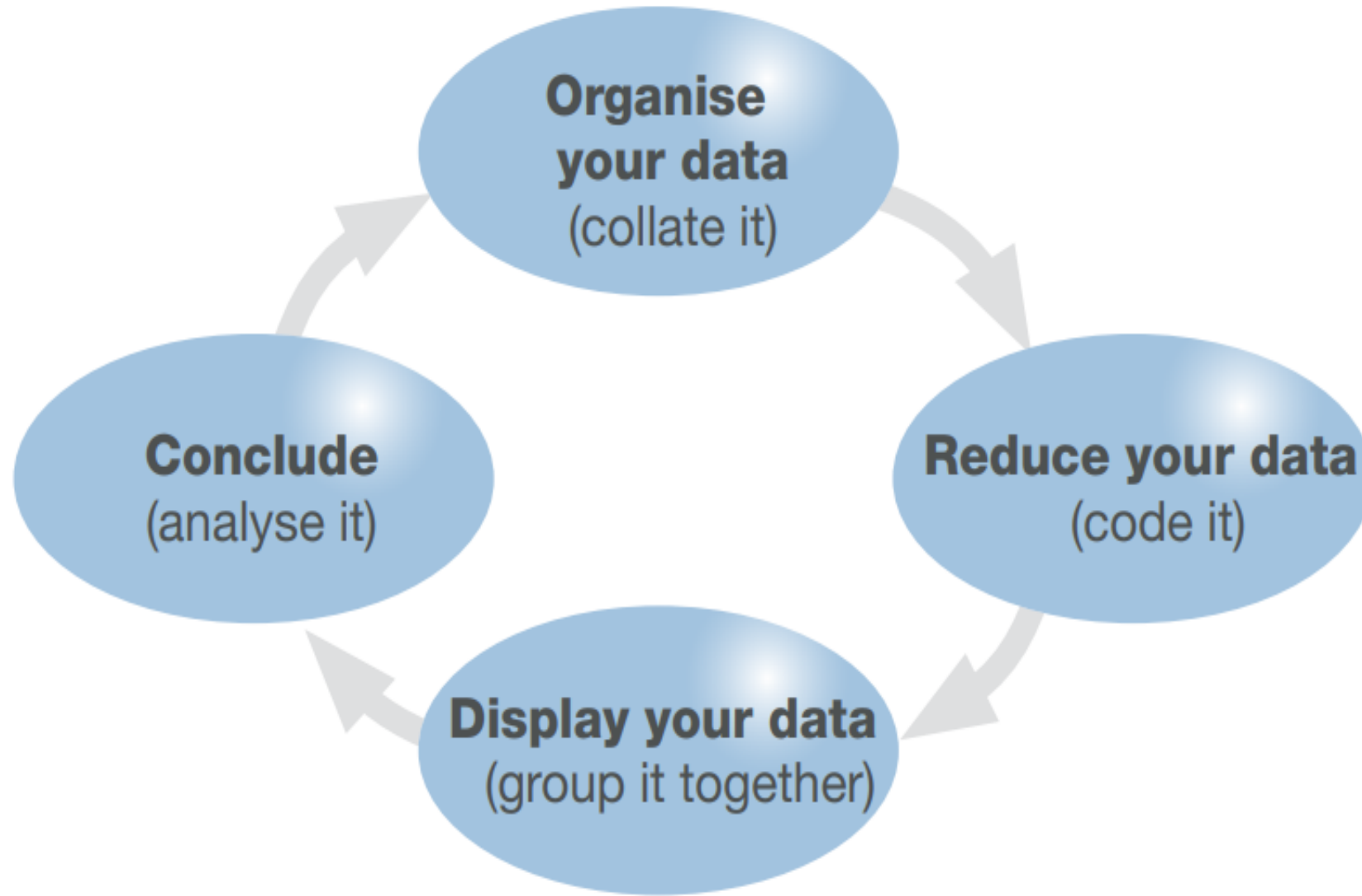


Qualitative data analysis

‘Qualitative data analysis involves organizing, accounting for and explaining the data; in short, making sense of data in terms of the participants’ definitions of the situation, noting patterns, themes, categories and regularities.’

(Cohen et al. 2007)





Coding = organising

‘Codes are tags or labels for assigning units of meaning’

(Miles and Huberman, 1994)

‘Coding is thus a method that enables you to organize and group similarly coded data into categories or “families” because they share some characteristic – the beginning of a pattern’

(Saldaña, 2016)



Coding your data...

- The purpose of coding is to apply themes and subthemes to the data
- You are aiming to organise the data into manageable 'chunks' so that you can compare relevant responses

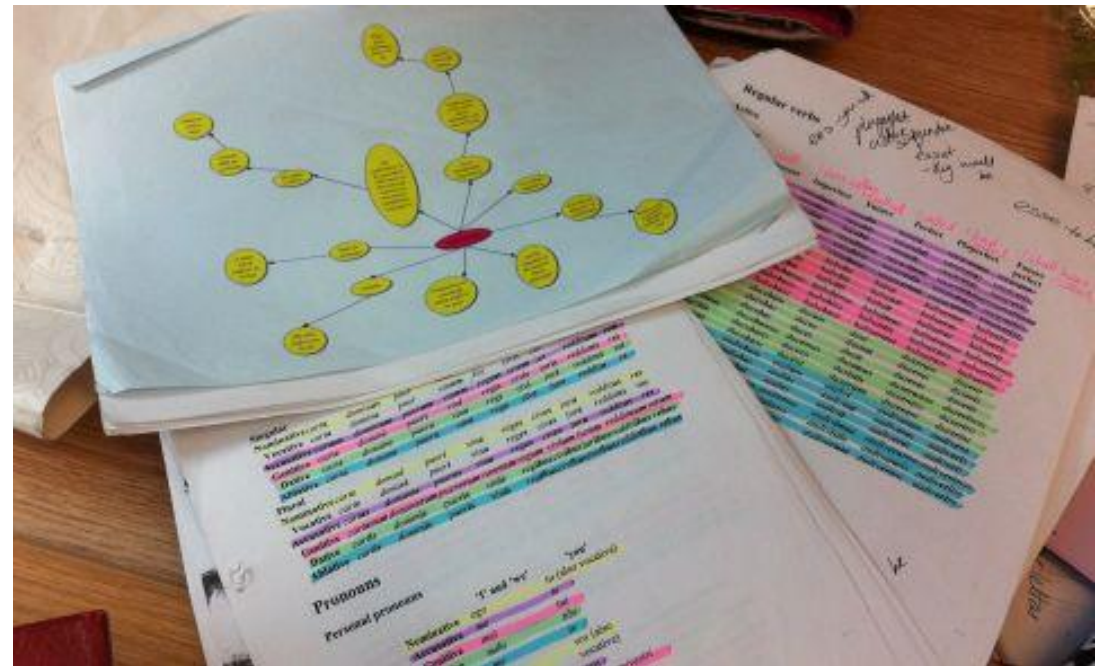


Figure 7 Coding interview data

1

Start by making a list of the particular things that you are interested in and give each one a name – these become your code labels. Alternatively or as well, you may assign each code a colour.

2

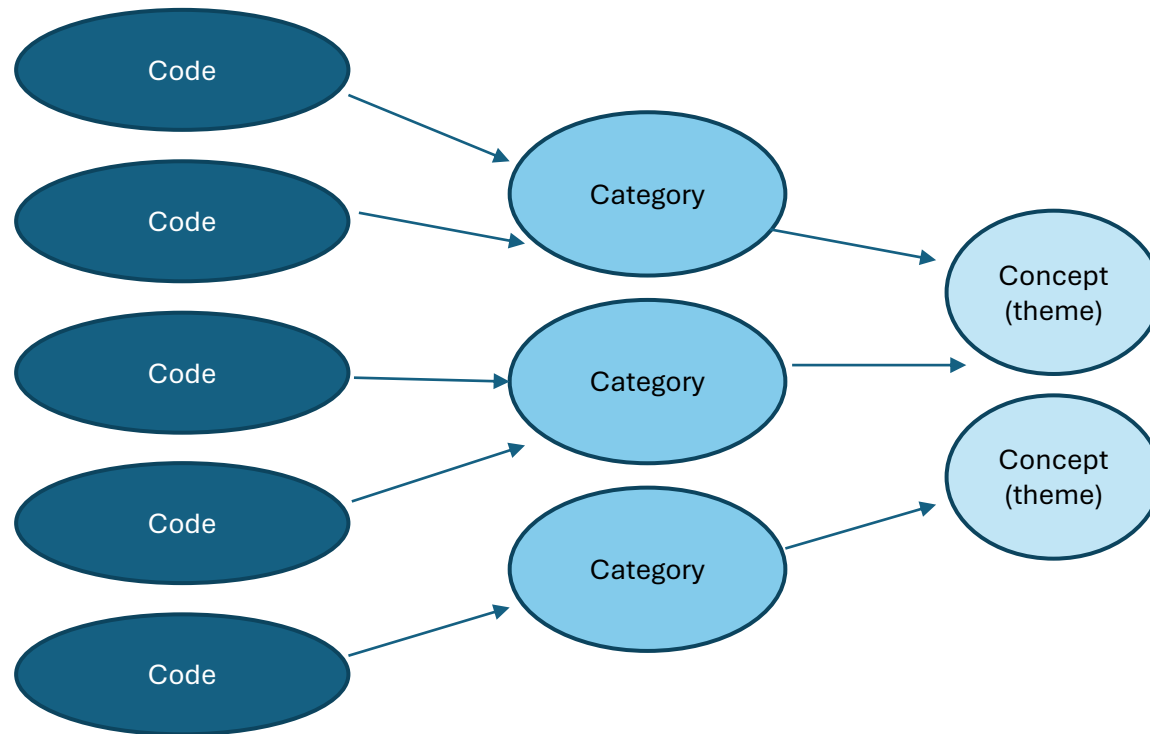
Select a code label and go through the interview notes (or transcript) and mark every time it occurs. How you do this is up to you - some people use hard copies, others do it on screen. Repeat this step with the other codes.

3

Repeat step two with all the interview notes.

(NFER, 2013)

Codes, categories and concepts...



‘Lichtman (2010) projects that most qualitative studies in education will generate 80–100 codes that will be organised into 15–20 categories and subcategories, which eventually synthesize into five to seven major concepts.’ (Saldaña, 2016, p9)

Manageable chunks...

‘It’s important to sell the asymmetric week on professional development for the teachers and improved outcomes for the children, because as soon as you start talking about teacher wellbeing, unless you’re in the profession people don’t want to know. They think teachers get enough time off as it is.’

Thematic codes:

Professional learning

Attainment

Health and wellbeing

Public discourse

Teacher, pupil, parent

A framework...



(Creswell, 2009)

Anonymising data...

‘The confidential and anonymous treatment of participants’ data is considered the norm for the conduct of research. Researchers should recognise the entitlement of both institutions and individual participants to privacy, and should accord them their rights to confidentiality and anonymity.’

(BERA, 2024)



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Cleaning your data...

- Check for errors, duplicates and outliers
- Does it add value?
- Think about structure/presentation
- Are there gaps? Does this matter?
- If in doubt, refer back to research question



Organising and presenting the data...

- By group
- By individual
- By issue
- By research question
- By instrument (research tool)



A glory and a headache!

‘Qualitative data analysis... is often heavy on interpretation, and one has to note that there are frequently multiple interpretations to be made of qualitative data – that is their glory and their headache!’

(Cohen et al. 2007)

QUESTIONS

