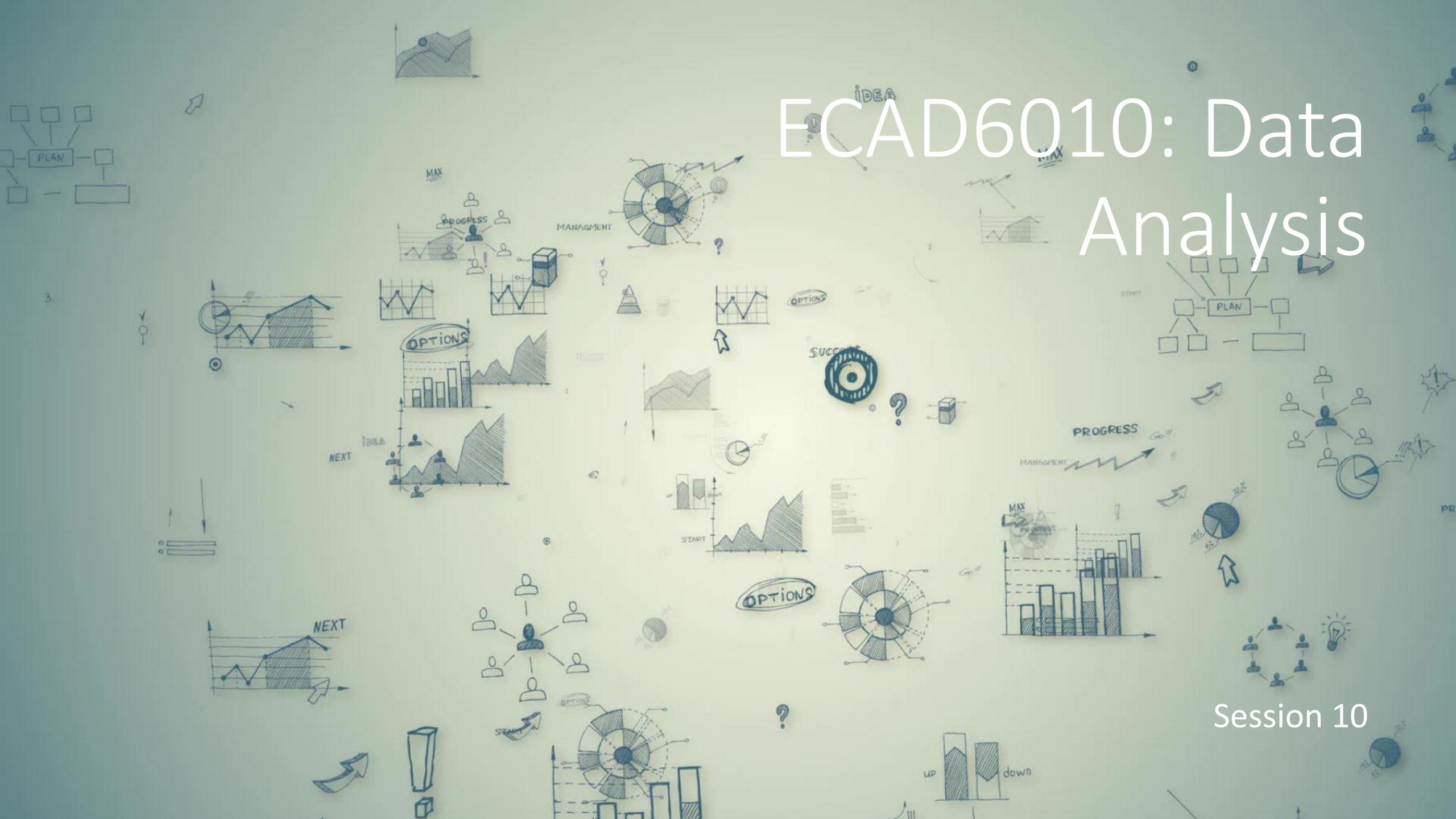
ECAD6010: Data Analysis



Session 10

Data Analysis:

Photo by Arie Wubben on Unsplash

Task:

- Read Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2). pp. 77-101

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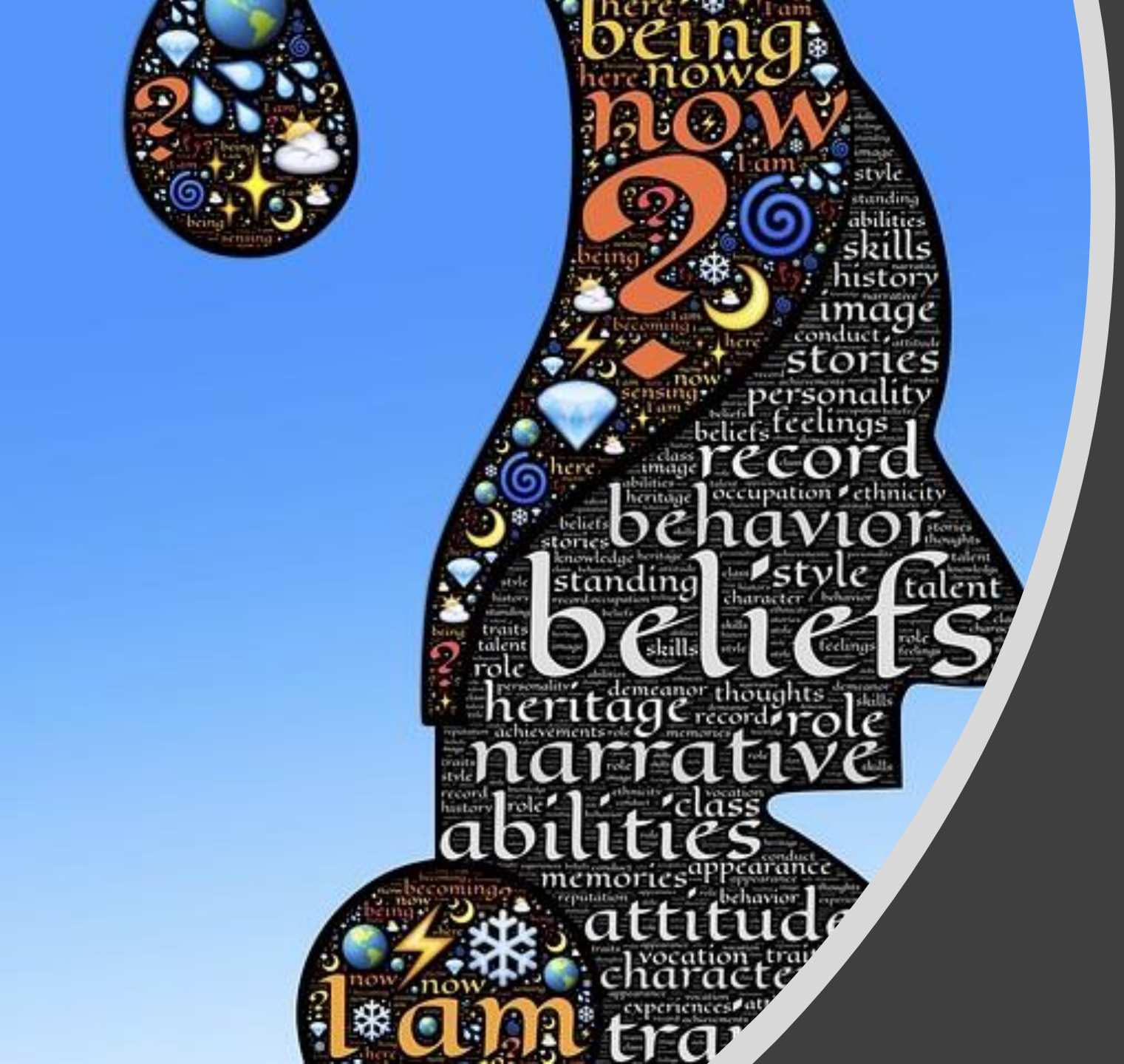

Researcher Positionality

How might researcher positionality impact upon the analysis of your data?

Data Analysis

The way you analyse the data should meet the aim/s of the research – be 'fit for purpose' (see Cohen et al., 2011)

i.e. what do you want the data to do? For example:

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

Activity

- Go back to your research question.
- Which of these elements (from the previous slide) are you trying to answer?

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Data Management

If you are starting a new research project, you will need to consider issues relating to the management of research data.

- **Storage and Backup:** How will the data be stored and backed up during the research? How will you manage access and security?
- **Selection and Preservation:** What data should be retained, shared and / or preserved? What is the long-term preservation plan for the dataset?
- **Data Sharing:** How will you share your data? Are any restrictions on data sharing required?
- **Responsibilities and Resources:** Who will be responsible for data management?

Task: Reviewing your data – organising, classifying, anonymising

Data Analysis Worksheet 1

Reviewing and Managing your Data

Research Question:

_____

_____

_____

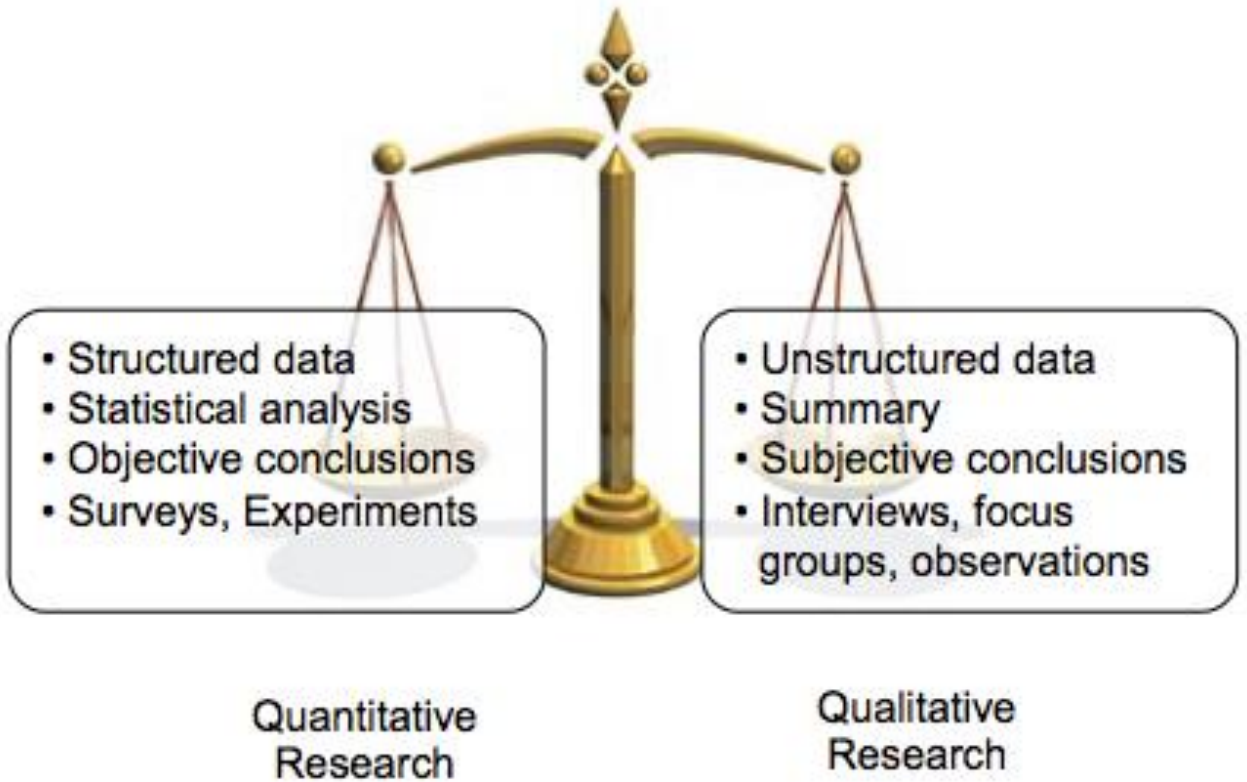
Data Log

ID	Type	Date	Description	Participants	Format	Notes
For e.g. Ob1	*Observation notes*	*30/1/19*	*30 minutes session at School A. 1st of four sessions on using creative practice to improve wellbeing. Observation framework: activities; goals; events; resources; discourse around creativity and wellbeing; feelings.*	*N = 6 teachers/TAs from School A*	*Transcribed, Word file*	*Participant 7 withdrew form research. Obs notes written by hand, and later transcribed*

Qualitative and Quantitative Data

- Quantitative data refers to numerical information generated through the research process that can be understood, represented and analysed statistically.

- Qualitative data is non-numerical (e.g. text, image, audio) and offers the researcher a descriptive account of the phenomenon being studied.



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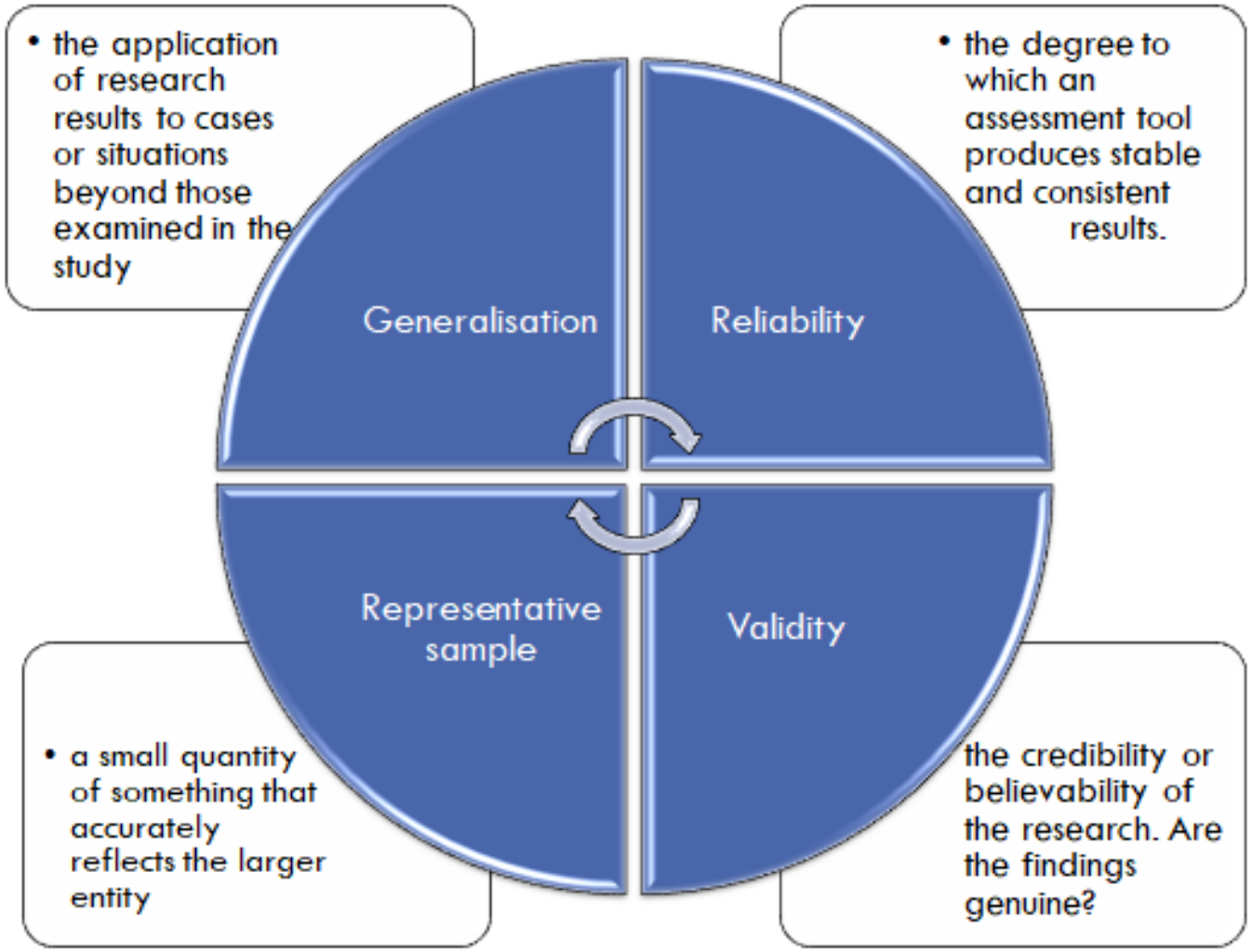
Validity and reliability

- In **qualitative data**, validity refers to the process of determining the fidelity (sometimes understood as accuracy) of the findings from the standpoint of the researcher, the participants, and/or the consumers of the research (Lincoln, Lynham, & Guba, 2013).

- In **quantitative data** validity is a factor of careful sampling, appropriate use of data collection instruments, and statistical analysis

- Reliability refers to the 'soundness' of the research (Rose & Johnson 2020), i.e. how dependable, consistent and replicable the data is.


• the application of research results to cases or situations beyond those examined in the study
• the degree to which an assessment tool produces stable and consistent results.
Generalisation
Reliability
Representative sample
Validity
• a small quantity of something that accurately reflects the larger entity
the credibility or believability of the research. Are the findings genuine?

Ensuring Trustworthiness in Qualitative Data (Bloomberg and Volpe, 2019)

- Credibility (believability) – triangulation of methods, reflection on bias/assumptions, allowing data to 'speak for itself'
- Dependability (consistency) – weaknesses in data collection tools? Using best method to answer question?
- Confirmability (ability to corroborate) – triangulation to reduce investigator bias – would someone else arrive at similar conclusions?
- Transferability (applicability) – is there sufficient context (rich data) to authentically convey meaning?, can readers use this to develop deep understanding?

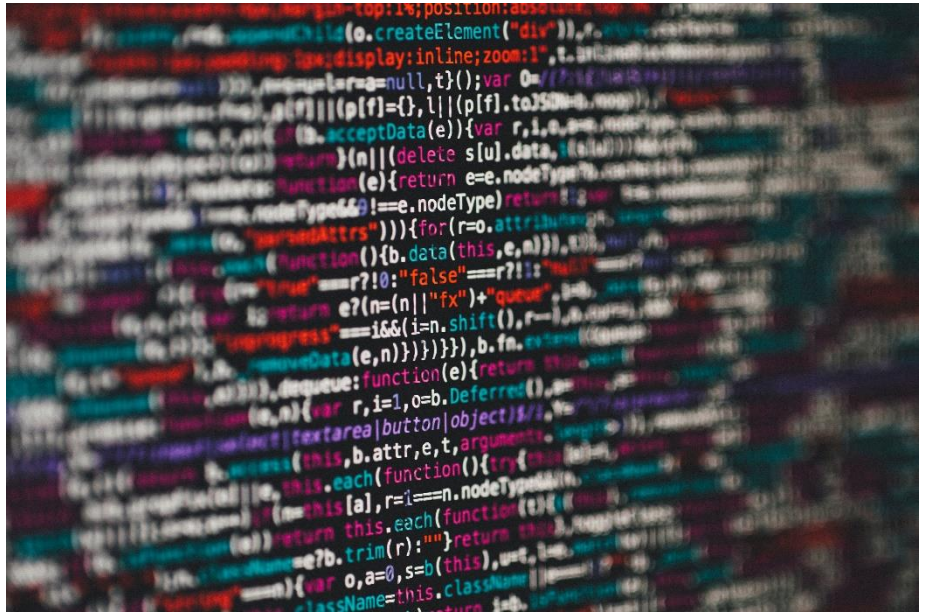
Reflexivity and transparency

It is worth remembering that no research can ever be 100% valid or reliable

In order to increase the levels of validity and reliability, it is important for researchers to adopt a reflexive approach.

If a researcher clearly describes the contextual intersecting of relationships (e.g., race, socio-economic status, age, cultural background) between the participants and themselves, it not only increases the credibility of the findings but also deepens our understanding of the work (Berger, 2015).

Qualitative Data: Thematic Analysis



Braun and Clarke (2006) define thematic analysis as,

“a method for identifying, analyzing and reporting patterns within data” (p.79)

and propose a six-step process for carrying out this analysis, as follows:

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, p.11)

Thematic analysis process:

1. Familiarisation with data
2. Generate preliminary codes to describe the data (open coding)
3. Identification of themes – search for patterns or themes
4. Review themes to generate a thematic map of the analysis
5. Definition and naming of themes, including ongoing analysis that tells the overall story

(Braun and Clarke, 2006)

Step 6: Reporting

References

- Berger, R. (2015) Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research*, 15(2), 219–234.
- Bloomberg, L.D. and Volpe, M. (2019) *Completing your Qualitative Dissertation: A road map from beginning to end* 4th Edition. CA: Sage.
- Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2). pp. 77-101
- Cohen, L., Manion, L. and Morrison, K. (2011) *Research Methods in Education. 7th Edition.* London: Routledge.
- Lincoln, Y., Lynham, S., & Guba, E. (2013). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. Denzin & Y. Lincoln (Eds.), *The landscape of qualitative research* (4th ed., pp. 199–266). Thousand Oaks, CA: SAGE.
- Nfer (2013) How to Run qualitative and quantitative research. Berkshire: NFER. https://www.nfer.ac.uk/media/2123/resm03.pdf