

# Data collection

Barbara Class

MAS & DAS Education in Emergencies

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# Synopsis

Research cycle for empirical studies

Data life cycle

Ethics

Quantitative oriented data collection

Qualitative oriented data collection

# What are your experiences with data collection?

Please go to the padlet and write about your experience with data collection

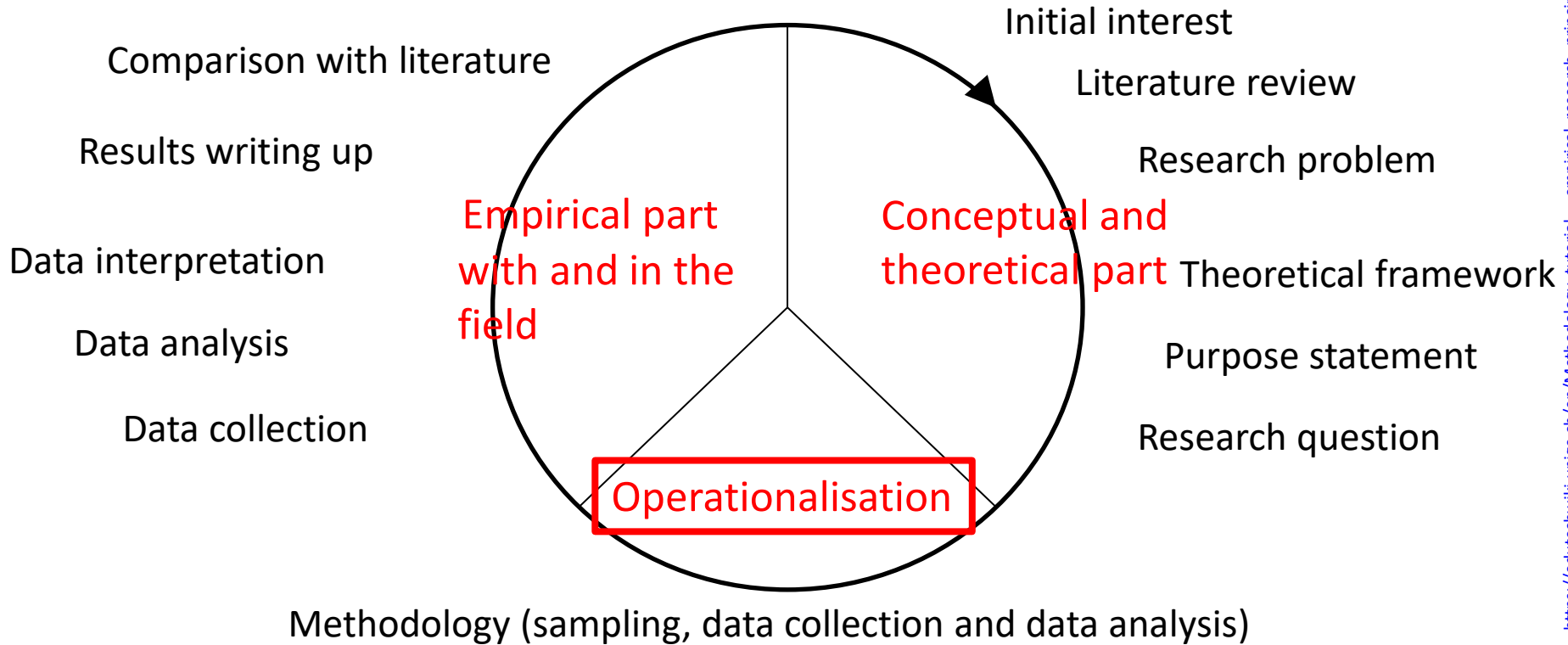
<https://unige.padlet.org/barbaraclass/mas-das-education-in-emergencies-f1xuywx11mq8409l>

# Research in education

- Research is fundamentally a «disciplined, balanced enquiry, conducted in a critical spirit (Thomas, 2013, cited by Coe, 2021)»
- Empirical research follows a given «research cycle»

Coe, 2021

# Research cycle for an empirical research



# Activity

Write a draft purpose statement for your research as you understand it right now

The following 3 slides help you with two generic scprints

# Purpose statement QUAL

The purpose of this ... (strategy of inquiry) study is to ... (undersand, explore, develop, discover) the ... (central phenomena being studied) for ... (participants, organisations) at ... (research site). At this stage of the research, the ... (central phenomenon being studied) is generally defined as ... (provide a general definition).

Creswell, 2014

# Purpose statement QUANT

The purpose of this ... (survey) study is to test the theory of ... that ... (describes outcomes, compares, relates) the ... (independent variable) to ... (dependent variable), controlling for ... (control variable) for ... (participants) at ... (research site). The independent variable(s) ... is defined as ... (definition provided). The dependent variable (s) is defined as ... (definition provided) and the control (and intervening variables) as ... (definitions provided).

Creswell, 2014



# Variables

Variable: «refers to a characteristic or attribute of an individual or an organisation that can be measured or observed and that varies among the people or organisations being studied. A variable typically will vary in two or more categories or on a continuum of scores, and it can be measured» Creswell, 2014

“A variable is considered dependent if it depends on an independent variable. **Dependent variables** are studied under the supposition or demand that they depend, by some law or rule (e.g., by a mathematical function), on the values of other variables. **Independent variables**, in turn, are not seen as depending on any other variable in the scope of the experiment in question”.

[https://en.wikipedia.org/wiki/Dependent\\_and\\_independent\\_variables](https://en.wikipedia.org/wiki/Dependent_and_independent_variables)

# Data: what is research data?

- “the evidence that underpins the answer to the research question”
- “recorded factual material commonly retained by and accepted in the scientific [research] community as necessary to validate research findings”  
<https://www.reading.ac.uk/research-services/research-data-management/about-research-data-management/research-data-defined>
- “any information that has been collected, observed, generated or created to validate original research findings”  
<https://www.fosteropenscience.eu/node/2132>  
[https://library.leeds.ac.uk/info/14062/research\\_data\\_management/61/research\\_dat%E2%80%A6](https://library.leeds.ac.uk/info/14062/research_data_management/61/research_dat%E2%80%A6)

# Data life cycle and data management

To help you plan your data life cycle, policies and templates exist.

<https://www.snf.ch/en/FAiWVH4WvpKvohw9/topic/research-policies>  
[https://www.snf.ch/media/en/4i9AE5YEIf7tqhGz/DMP\\_content\\_mySNF-form\\_en.pdf](https://www.snf.ch/media/en/4i9AE5YEIf7tqhGz/DMP_content_mySNF-form_en.pdf)

Archives to find or deposit data also.

Ex: [AfricarXiv](#), [Yareta](#), [OLOS](#), [EOSC](#)



<https://www.reading.ac.uk/research-services/research-data-management/about-research-data-management/research-data-defined>

# Types of data

Two types of data:

- Real vs opinion
- Normative / descriptive vs enacted

Sometimes difficult to say...

Ex:

- Exam marks
- Field notebooks

# Ethics and data protection laws, standard ethics

- Collecting data is regulated by law

<https://eur-lex.europa.eu/eli/reg/2016/679/oj>

<https://www.kmu.admin.ch/kmu/en/home/facts-and-trends/digitization/data-protection/new-federal-act-on-data-protection-nfadv.html>

- For your Master thesis, you must check the CUREG links

<https://cureg.unige.ch/en/>

<https://cureg.unige.ch/projet-de-procedure-pour-lanalyse-ethique-des-projets-de-recherche-realises-dans-le-cadre-dun-memoire-de-master/>

- Open Science vs Data protection: principle of proportionality, *as open as possible, as closed as necessary!*

[https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Hochschulpolitik/Open\\_Science/2022\\_webinars/20220721\\_Webinar\\_Open\\_Science\\_and\\_Data\\_Protection.pdf](https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Hochschulpolitik/Open_Science/2022_webinars/20220721_Webinar_Open_Science_and_Data_Protection.pdf)

# Situated and contextual ethics

“an ethics that takes into account the particularities and constraints that social, political and economic contexts place on individual actions and collective activity; a critical approach to ethics in the fight against the imposition of a standardised ethics based on scientific neo-liberalism or what some refer to as "dominant science with global ambitions". ”

Own translation of: “une éthique pensée en fonction des particularités et des contraintes que les contextes sociaux, politiques et économiques exercent sur les actions singulières et sur l’activité collective ; une éthique pensée dans une perspective critique, dans la lutte contre l’imposition d’une éthique standardisée relative au néolibéralisme scientifique ou à ce que certains désignent comme « science dominante à prétention mondiale » (Piron, Regulus & Madiba, 2016).»

Charmillot, 2017, p. 21

[https://www.unige.ch/sciences-societe/socio/files/8215/1151/6943/Sociograph\\_34\\_web.pdf](https://www.unige.ch/sciences-societe/socio/files/8215/1151/6943/Sociograph_34_web.pdf)

# Generalities to collect data

Choosing appropriate:

- Time
- Place
- Data sources (sampling)
  
- Alignment with theoretical parts
- Pre-testing of instruments with some participants representative of the sample

# Sampling QUANT

- Large (vs small)
- Random (vs purposive)
- Once (vs several iterations)
- Identify your target population and gather between 50 and 100 answers (for a MAS thesis)

[https://edutechwiki.unige.ch/en/Methodology\\_tutorial\\_-\\_quantitative\\_data\\_acquisition\\_methods](https://edutechwiki.unige.ch/en/Methodology_tutorial_-_quantitative_data_acquisition_methods)

Schneider, 2016



# Sampling QUAL

- Small (*vs* large)
- Purposive (*vs* random)
- Various iterations (*vs* one shot)
- Different techniques (ex. snowball, maximal variation, homogeneous, etc.)

[https://edutechwiki.unige.ch/en/Methodology\\_tutorial\\_-\\_qualitative\\_data\\_acquisition\\_methods](https://edutechwiki.unige.ch/en/Methodology_tutorial_-_qualitative_data_acquisition_methods)

Schneider, 2016

# Data collection QUANT: Survey

## Quality criteria

- Choose an instrument that has already been statistically tested whenever possible
- Else, build a matrix

BLOCS OF QUESTIONS	CONCEPT MEASURED	RELATED VARIABLE / HYPOTH	SOURCE	CODE	TYPE OF QUESTION
A. Catégorie 1				-	
1. Question 1			Author,		Scale
2. Question 2			Theory		Yes/No
3. Question 3					

- Pre-test and if you have sufficient valid answers, test the reliability of your instrument

Schneider, 2016

# Data collection QUAL : Documents

Document: textual or visual (public, practical, personal)

Assess quality of documents:

- Authentic (source genuine, who developed it, authority)
- Credible
- Representative of the dataset
- Clarity and quality (intended audience, author, purpose of creation, use of, presentation)

=> Understand the research context and participants

=> Representative of social meaning-making

Savin-Baden & Howell Major, 2013

# Data collection QUAL: Observations

Quality criteria:

- Role of researcher (peripheral, passive, balanced active, complete participation)
  - Consistency with researcher's positionality
  - Time spent in the field
  - Information collected and observation grid (physical setting, participants, activities, interactions, ways of sharing information, non-verbal and symbolic communication)
- => Develop understanding of the context

Ex:



Savin-Baden & Howell Major, 2013

# Data collection QUAL: Semi-structured interviews

Interview script that serves as guide for the conversation

Quality criteria

- Interview guide (types of questions chosen according to purpose)
- Number of interviews with the same person
- Rigorous accounting (summary, follow up questions, transcription)

Ex:



Question	Answer
1. How do you feel about the current situation?	
2. What are the main challenges you face?	
3. How do you manage these challenges?	
4. What are your future plans?	
5. How do you see the role of the organization?	
6. How do you see the role of the government?	
7. How do you see the role of the community?	
8. How do you see the role of the media?	
9. How do you see the role of the education system?	
10. How do you see the role of the health system?	

=> Meaningful perspectives shared by participants

Savin-Baden & Howell Major, 2013

# Références (1)

Coe, R., Waring, M., Hedges, L., & Ashley, L. (Eds.). (2021). Research Methods and Methodologies in Education (3 ed.). Sage.  
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Creswell, J. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage Publications, Inc.

Savin-Baden, M., & Howell Major, C. (2013). Qualitative research. The essential guide to theory and practice. Routledge.