



ECDE7002 INTRODUCTION TO RESEARCH METHODS IN EDUCATION

Choosing a research approach

Aims for today

- To develop knowledge of key research philosophy concepts, including paradigms, ontology and epistemology.
- To explore how philosophical positions shape reasoning (deductive, inductive, abductive) and influence research approaches.
- To apply these ideas to educational examples in order to begin identifying an appropriate research approach.

Re-cap

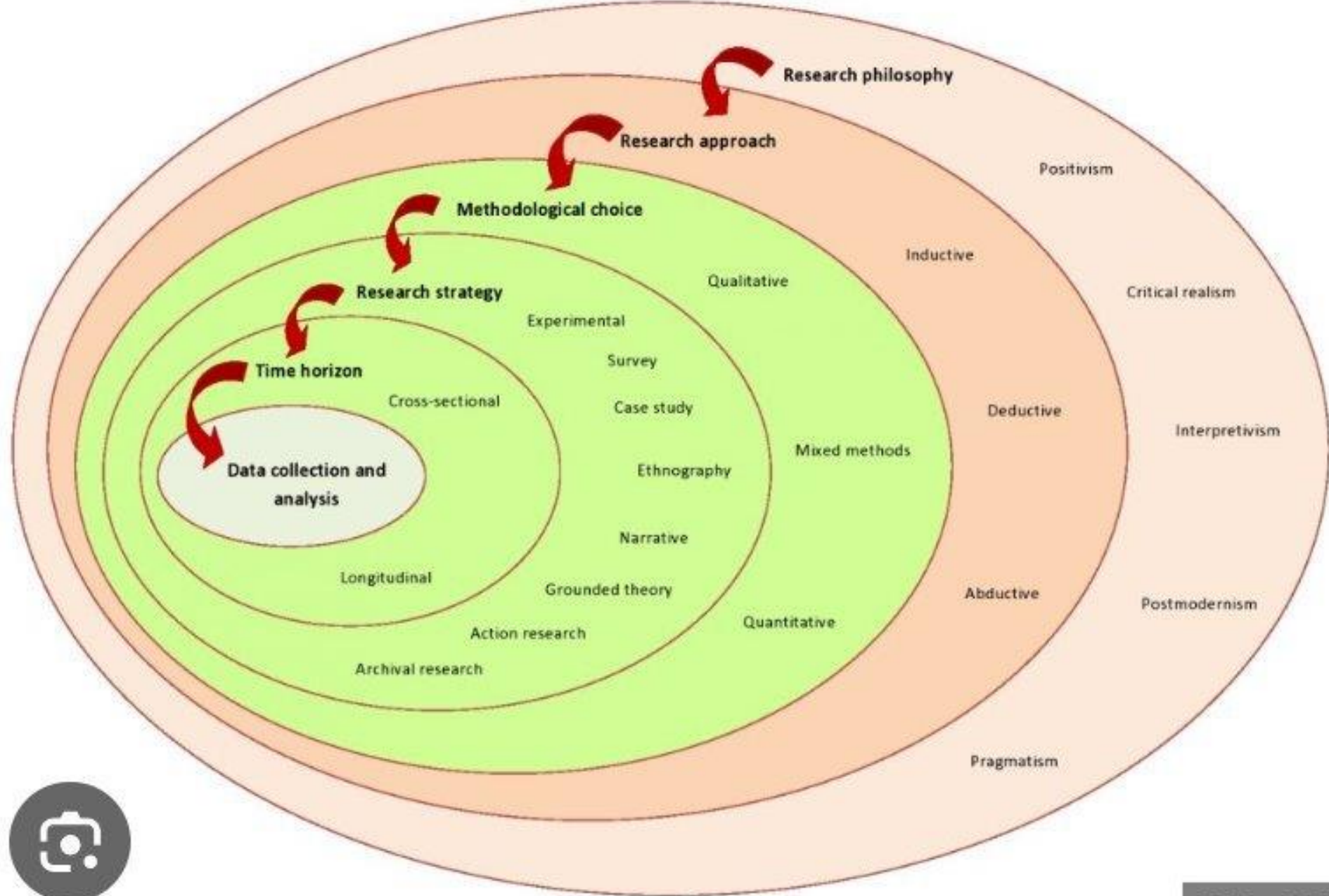
- Research = systematic inquiry
- Research involves choices shaped by beliefs about reality
- We touched on **ontology** (what exists/is real) and **epistemology** (how we know things)
- Today: going deeper into *why* these matter and how they influence your research approach

Assessment Component 1: 3500 words

Critically reflect on research paradigms that would enable you to conduct a mixed methods enquiry that would meet identified research questions. With reference to relevant literature, identify an area of research you may want to explore. Create between 1 and 3 research questions that would be answerable through a mixed methods approach to data collection. Critically appraise qualitative and quantitative research paradigms which link to your research questions, justifying why they are appropriate.

Section	Suggested content	Suggested word count
Introduction & rationale	What is your research about? Why have you chosen this topic? Why is it important (to you/to others)? Refer to literature to support your decisions.	300
Literature review	What does the published literature say about your topic? Do authors agree or disagree? Are there studies available that are similar to the study that you are proposing? Is there a gap in the literature that you intend to fill?	800
Theoretical framework / methodology	What is your positionality with regard to your topic? How do the following elements have an impact on your study: • Ontology • Epistemology • Research paradigm (e.g. positivism, constructivism, pragmatism) Refer to literature to support your points.	700
Research methods/tools	Why might a mixed-methods approach be useful in your study? What are the strengths and limitations of this approach? (You could include a discussion of qualitative and quantitative data here.) Refer to literature to support your points.	700
Research Questions	What are your research questions? Why have you chosen them? Within which paradigm do they sit? What type of data would need to be collected in order to answer each one? You could introduce each research question separately here. Refer to literature to justify your decisions.	900
Conclusion	Summarise your intentions.	100

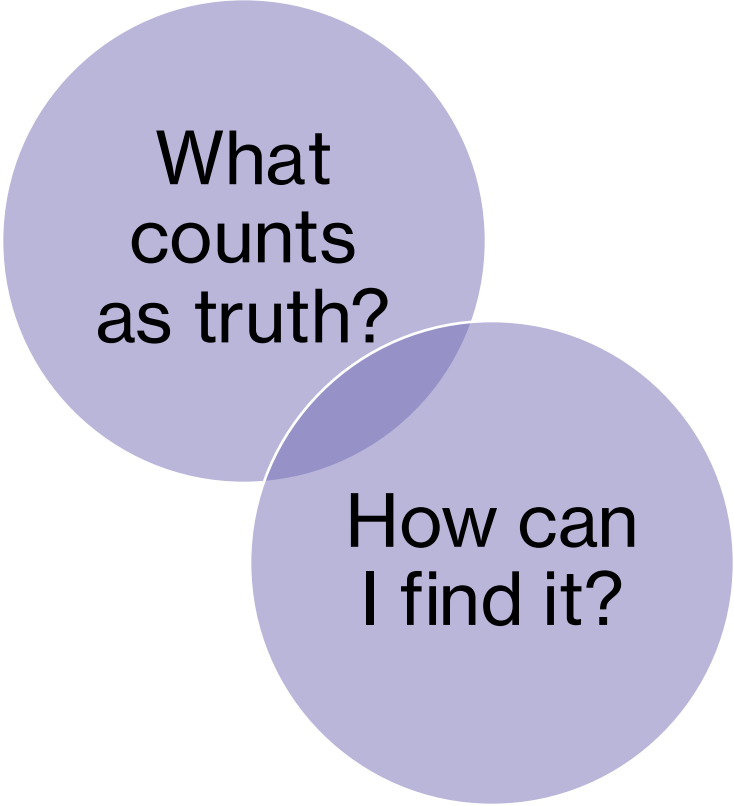
REVISITING THE RESEARCH ONION



What is a paradigm?

- A paradigm is a set of interrelated assumptions about:
 - reality (ontology)
 - knowledge (epistemology)
 - values (axiology)
 - and how we should study the world (methodology)

Paradigms help us to answer



What
counts
as truth?

How can
I find it?

How paradigms shape our reasoning



Ontology

Epistemology

Reasoning

Approach

How reasoning relates to philosophy

- Different paradigms tend to align with different forms of reasoning
 - **Deduction** → *often* associated with positivism
 - **Induction** → *often* associated with interpretivism
 - **Abduction** → *often* associated with pragmatism / mixed methods

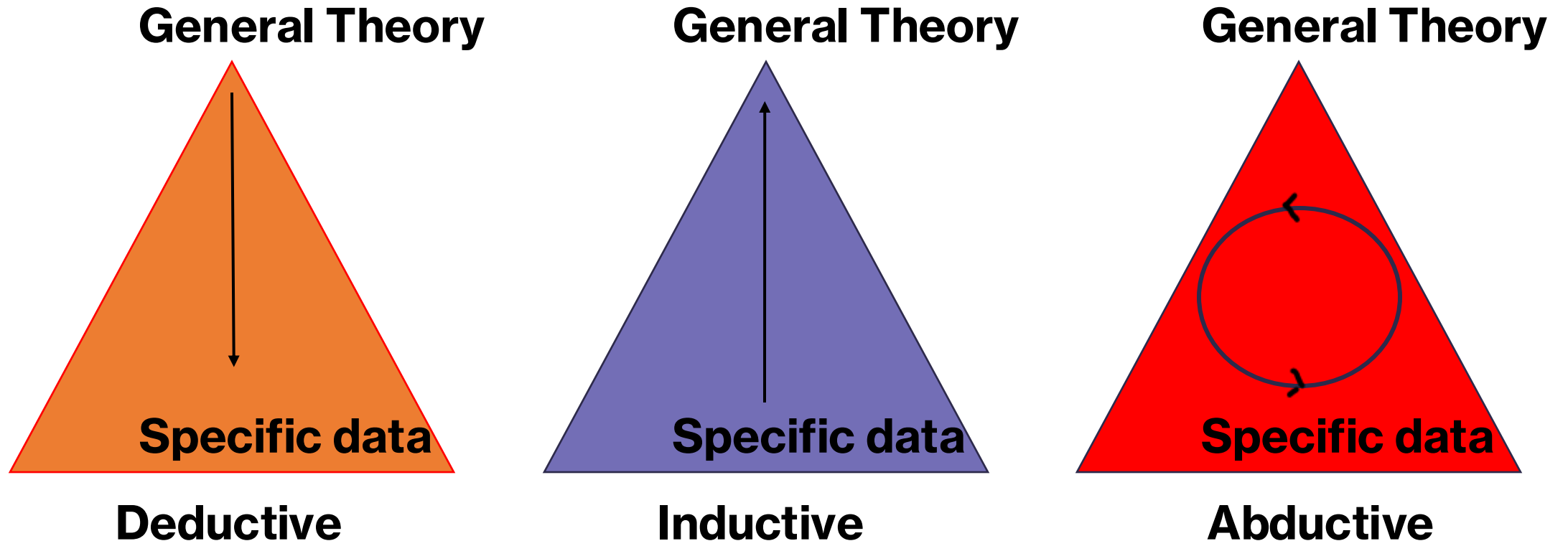
Remember – these are not rigid categories, but they will help you to justify your research choices.

Paradigms in practice

- Problem – low engagement in a history lesson

- **Positivist:** "What measurable factors predict engagement?" → surveys, tests
- **Interpretivist:** "How do students experience engagement?" → interviews, observations
- **Pragmatist:** "What combination of data best explains engagement in this context?" → mixed methods

Understanding your reasoning position



Reasoning in action – what this looks like in research contexts

- **Deduction:**

“The theory says X improves attainment → I test this with a survey.”

- **Induction:**

“I observe behaviour → I develop themes → I build a theoretical understanding.”

- **Abduction:**

“I notice something unexpected → I search for possible explanations
→ I test the most plausible.”

The distinction between research methods and research methodology is fundamental yet often misunderstood. Methodology refers to the approach or framework used in research, influenced by the researcher's theoretical perspective and guiding principles. It encompasses the researcher's beliefs, theories, and values that support their research approach.

On the other hand, method refers to the specific techniques, procedures, or tools employed for data collection and analysis. It involves gathering and analysing data, such as surveys, interviews, or documents. While methodology provides a comprehensive framework, the method focuses on the specific strategies used within that framework.

The methodology is the broader theoretical perspective and guiding principles, while the method is the practical techniques and procedures used in research. (Gustavo 2023)

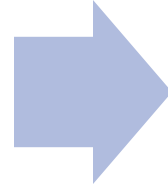
Methodology

- Theoretical positioning of the research
- Body of knowledge that explains how the research is done
- Justification of using a particular research method

Method

- The 'doing' of the research
- Strategy employed in the collection of data for analysis to uncover new information or gain a better understanding of a topic
- The tool(s) used to carry out the research

Methodology



Methods

- What do we do now the groundwork is in place?

QUANTITATIVE

QUALITATIVE

MIXED METHODS



Quantitative Research (numbers)

- A means for testing objective theories by examining the relationship among variables.
- These variables can be **measured**, typically on instruments.
- Numbered data can be analysed using statistical procedures.

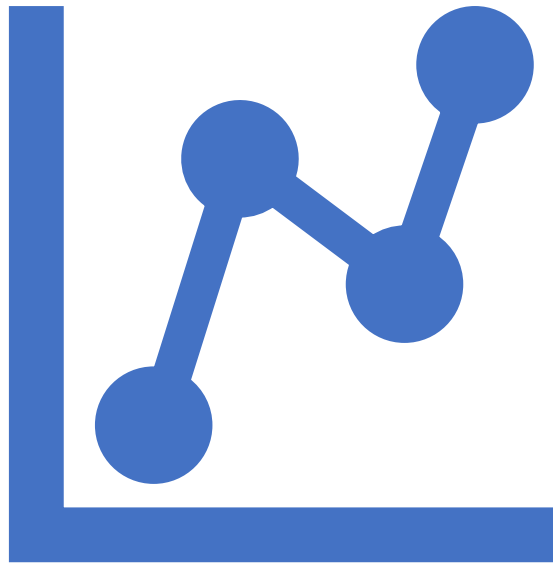
(Creswell, 2008)



Qualitative Research (words)

- A means for exploring and understanding the meaning of individuals or groups ascribed to a social or human problem.
- The process of research involves emerging questions and procedures.
- Data is typically collected in the participant's setting.
- Data analysis inductively builds from particulars to general themes, and the researcher making interpretations of the meaning of the data.

(Creswell, 2008)



Mixed Methods Approach

- An approach to inquiry that combines both qualitative and quantitative methods.
- It involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research.

(Creswell, 2008)

Examples of common approaches in educational research



Action research



Ethnographic research



Case study

Action Research (AR) – based in practice or a community and not separate from it; the antithesis of ‘ivory tower research’. The purpose of AR is to work towards practice change during the research process, not merely to explore and describe a situation.

Munn-Giddings (2021)

Strengths	Limitations
• Designed to bridge the theory-practice gap; challenges assumptions about who can do research • Researcher is ‘inside’ the situation being studied • Assumed commitment to improve practice - encourages reflective and reflexive engagement • Might involve collaboration with colleagues	• Potential for researcher bias • May be tensions in terms of power dynamics One of the key advantages of AR is that the researcher brings their practice knowledge to the research process. How can we assure that we challenge our own assumptions and genuinely ‘hear’ the voices in our research?

Ethnographic research (ER) – type of qualitative research that involves immersion into a particular community or organisation to observe behaviour and interactions.
Bhatti (2021)

Strengths	Limitations
• Used to advance a deeper understanding of social norms • Understanding of cultures and subcultures by offering in-depth insider accounts which cannot be gathered hurriedly	• Demands sustained commitment of interest and commitment over time • Accurate representation of messy, complex data can be difficult – researcher bias?

Think of a naturally-occurring setting where you might conduct an ethnographic enquiry.

Case Study (CS) – In empirical research, a ‘case’ may be an individual, an institution, an event, project, policy or any type of system. A case study research design usually involves qualitative methods, but quantitative methods are sometimes also used.

Yin (2018)

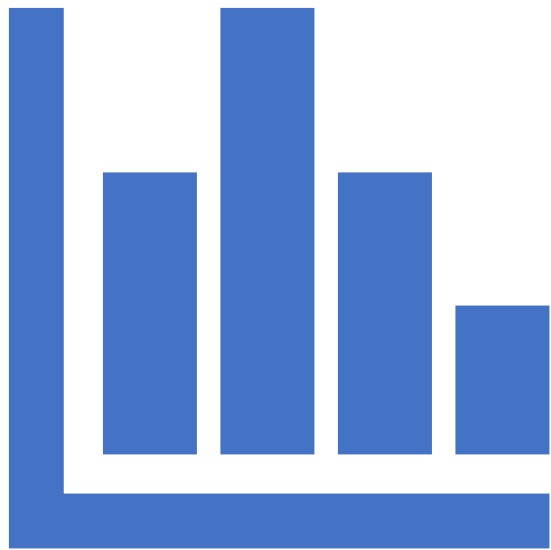
Strengths	Limitations
• Enables the researcher to investigate a case in depth, often through immersion in and repeated visits or encounters with the case. • Has the ability to answer ‘why’ and ‘how’ questions, rather than simply ‘what’	• Not possible to generalise findings • Usually small sample sizes Consider if case study research is appropriate for your research, following Yin’s (2018) criteria: does it ask HOW and WHY RQs and does it focus on real-world contexts?



Research tools

What research tools are available to us?

Make a list



What kind of data will they offer you?

Qualitative/Quantitative/Both?
How?

Quantitative research design

- ‘... values breadth, statistical descriptions and generalizability. Quantitative approaches to research centre on achieving objectivity, control and precise measurement. Methodologically, these approaches rely on deductive designs aimed at refuting or building evidence in favour of specific theories and hypotheses’.

Leavy (2017, p.87)

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Leavy (2017, p. 87)

Qualitative research design

- ‘...value depth of meaning and people’s subjective experiences and their meaning-making processes. These approaches ascribe to their lives – to activities, situations, circumstances, people and objects. Methodologically, these approaches rely on inductive designs aimed at generating meaning and producing rich, descriptive data’.

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Activity

- Choose a topic (e.g., mobile phone use in class, assessment feedback, wellbeing).
- Describe how a **positivist**, **interpretivist**, and **pragmatist** researcher might investigate this topic.
- Identify which approach feels closest to your own thinking and why.

Philosophy checklist

What do I believe reality is like in my topic?

What counts as evidence for me?

Do I think there is one truth or multiple truths?

How do people construct meaning in my context?

Does my paradigm point me toward qualitative, quantitative, or mixed approaches?



Just one more thing...

- In the chat please use the prompt below and fill in the gaps.
- ***After today, I think my research philosophy might be [blank] because [blank]***

Further reading

- Bhatti, G (2021). Ethnographic Research. IN Coe, R, Warning, M, Hedges, L and Ashley, L (2021) (Eds) *Research Methods and Methodologies in Education. 3rd Edition* London: Sage Publications
- Munn-Giddings, C (2021) Action Research IN Coe, R, Warning, M, Hedges, L and Ashley, L (2021) (Eds) *Research Methods and Methodologies in Education. 3rd Edition* London: Sage Publications
- O'Leary, Z (2021). The Essential Guide to Doing Your Research Project. London: Sage Publications
- Yin, R (2018). Case Study *Research and Applications: Design and Methods. 6th Edition.* CA: Sage Publications