

The Education, Curriculum and Policy Scholarship Playbook

A Practical Guide to Doing Research in Education,
Curriculum and Policy

Matt McLain

First edition · 2026



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The Education, Curriculum and Policy Scholarship Playbook

Preface

This playbook began with a simple frustration. Too often, research methods are taught as an abstract catalogue of techniques (a parade of designs, instruments and terms to be memorised) set apart from the real, situated questions that draw people into educational research in the first place. Students and practitioners are then left to translate that abstraction into practice on their own, frequently at the very moment they can least afford to get it wrong.

The Education, Curriculum and Policy Scholarship Playbook is an attempt to close that gap. It is written for the teacher who wants to understand their own classroom more deeply, for the postgraduate student facing a first empirical study, and for the scholar navigating the particular demands of curriculum and policy research. Its guiding conviction is that research is best learned not as doctrine but as informed decision-making: a series of reasoned choices that anyone can learn to make well, and to defend.

Throughout, I have tried to be honest about the fact that real research is untidy. Questions shift, data resist, and the neat sequence described in textbooks rarely survives contact with a school, a community or a policy setting. Rather than hide this, the playbook treats it as the normal condition of inquiry and offers ways to think clearly and act deliberately in the midst of it. Where I have taken a position, I have signposted it as such, so that you can disagree and choose your own path with your eyes open.

No text of this kind is written alone. It owes a debt to the students, colleagues and fellow researchers whose questions, doubts and insistence on plain answers shaped every chapter. It is offered here not as the final word but as a working companion — one I hope you will annotate, argue with and adapt as your own scholarship develops.

The Education, Curriculum and Policy Scholarship Playbook

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This playbook has been shaped by the generosity of colleagues at Liverpool John Moores University. I am especially grateful to Dr Fran Tracy and Dr Graham Downes, and to others across and outside of the University, whose conversations, questions and critical reading sharpened both its argument and its detail. Any errors that remain are, of course, my own.

It was written first and foremost with and for the students on our MA Advanced Education Practice (AEP) and Doctor of Education (EdD) programmes. Their inquiries into their own practice prompted many of the examples and much of the

framing found here, and their willingness to grapple with difficult methodological questions (and to insist on plain answers) has made this a better and more practical book.

In preparing the playbook I made use of Claude, an AI assistant developed by Anthropic, as a drafting and editing tool, to help structure material, test explanations and refine prose. All content was directed, reviewed and edited by the author, who takes full responsibility for the final text. I have chosen to acknowledge this openly, in the same spirit of methodological transparency that the playbook advocates throughout.

chapter one

1. Doing education, curriculum and policy scholarship: an overview of the playbook

Introduction

Welcome to The Education, Curriculum and Policy Scholarship Playbook. This playbook is a practical companion for anyone undertaking research in education — whether you are a teacher investigating your own classroom, a postgraduate student designing a first study, or an established scholar working across curriculum and policy. Its purpose is to demystify the research process: to explain not only what researchers do, but why they make the choices they do, and how to make those choices well.

Research in education is rarely tidy. Real questions are messy, settings are complex, and the “right” method is seldom obvious. Rather than offering a single recipe, this playbook treats research as a craft — a set of decisions, each with its own reasons, trade-offs and consequences. Its aim is to help you build a coherent inquiry in which your problem, your questions, your methods and your underlying assumptions all hang together — the “golden thread” that runs from a problem worth studying through to conclusions you can defend.

The playbook moves from the concrete to the conceptual. It opens with the practical business of doing research — practitioner inquiry approaches for studying and improving your own practice (Chapter 2), and the work of discovering and defining a research problem and linking it to clear aims, objectives and questions (Chapter 3). It then turns to the people and principles involved — choosing participants (Chapter 4) and research ethics in practice (Chapter 5) — before exploring the tools of analysis and evidence: argumentation and discourse (Chapter 6), research methods (Chapter 7), and qualitative and quantitative data analysis (Chapters 8 and 9). From there it examines the approaches and paradigms that shape how education, curriculum and policy are studied (Chapters 10 and 11). It goes on to consider what qualitative, quantitative and mixed-methods designs can and cannot tell us (Chapter 12), and the philosophical foundations — ontology, epistemology, methodology, axiology and praxeology — that underpin every methodological choice (Chapter 13). Finally, Chapter 14 brings these threads together to help you plan and carry out your own inquiry.

Each chapter follows a common shape: an introduction that frames the topic, structured guidance and worked detail, and references for further reading. You need not master every idea before you begin; research is learned by doing, and the playbook is meant to be returned to as your project develops. Use it to interrogate your own decisions, to anticipate the

questions that examiners, reviewers and readers will ask, and to build the confidence to defend the choices you make.

Above all, this playbook is an invitation to think carefully and act deliberately. Good research begins not with a method, but with a genuine question and the willingness to pursue it with rigour, honesty and imagination.

chapter two

2. Practitioner inquiry in education, curriculum and policy scholarship

Introduction

In this chapter, we explore practitioner inquiry: the process by which educators investigate their own practice as a form of research. Practitioner inquiry (often called action research or reflective practice) starts from questions about real classroom events or policy issues that teachers and administrators care about. For example, imagine a maths teacher who notices that a particular lesson plan isn't engaging students as hoped. Instead of ignoring this, the teacher designs a small study: perhaps varying instructional strategies in two sections of a class to see which approach leads to better student reasoning. This kind of self-directed exploration is practitioner inquiry: the teacher acts as researcher, systematically examining a problem in the context of the classroom.

Throughout this chapter, we discuss how practitioner inquiry differs from other research approaches. Practitioner research is typically cyclical (try something, reflect, try again) and collaborative (often involving colleagues or students in consent and feedback). We examine methods that teachers can use in-situ, such as keeping detailed journals,

conducting low-stakes interviews with students, or analysing student work samples. Importantly, we emphasise that practitioner inquiry is not "perfect research" with massive samples and laboratory controls; it is honest, messy investigation. Its strength comes from being immediately relevant to practice. For example, a school principal might track attendance data before and after a new family-engagement initiative, treating the school year as a field experiment.

This chapter introduces action research, lesson study, learning study and related approaches (outline, assumptions, rigour, process and key questions), alongside quality criteria for practitioner inquiry. Practitioner inquiry is the systematic, intentional study by practitioners of their own practice: an 'inquiry as stance' sustained over a career (Cochran-Smith & Lytle, 2009). Its defining feature is that the researcher is an insider seeking to understand and improve practice, so rigour cannot rest on detachment; it is established through disciplined evidence, collaboration and critique. The approaches below are a family, not rivals: (i) lesson study is

a collaborative form; (ii) learning study adds an explicit theory to it; (iii) reflective practice underpins them all; and several can be framed within an action–research cycle.

Table 1 provides an overview of common practitioner inquiry approaches, their assumptions, biases, processes and key questions.

Table 1. *Practitioner inquiry approaches in education, curriculum and policy*¹

Approach	Outline	Assumptions	Rigour & bias checks	Process (cycle)	Key questions
Action research & participatory (PAR)	Practitioners systematically investigate and improve their own practice through iterative cycles; PAR extends this to co-inquiry with participants and an emancipatory purpose. Roots in Lewin; developed in education by Stenhouse, Carr & Kemmis, and Elliott.	Practitioners generate valid knowledge about their own settings; knowing and doing are intertwined (praxis); research should change, not merely describe, practice.	Insider bias and advocacy; conflating hoped-for with actual change. Guard with triangulation, critical friends, systematic (not impressionistic) data, and attention to the ethics of researching one's own pupils.	Plan → act → observe → reflect → re-plan. Set a focus; gather baseline; introduce a change; collect evidence; analyse; refine over successive cycles.	How can I improve this aspect of my practice? What is actually happening, and with what effect? What will I change next, and why?
Collaborative teacher inquiry inquiry groups / PLCs	Groups of teachers systematically investigate a shared question about their practice and pupils'	Inquiry is a career-long stance, not a one-off; knowledge is generated collectively	Groupthink and consensus over evidence; superficial "data" use; confirmation	Agree a shared inquiry question → gather and examine evidence of pupil learning →	What do we need to understand about our pupils' learning? What does our evidence

¹ Practitioner inquiry connects to the wider research design covered elsewhere in this series: it still needs a clear problem and question, appropriate evidence and warranted claims (the 'golden thread'), and it sits within the pragmatist and critical/participatory traditions with a strongly praxeological orientation: knowing enacted in, and for the improvement of, practice. Two considerations cut across every approach: the ethics of insider research (informed consent, the power differential over one's own pupils, anonymity and safeguarding), and sustainability (designing inquiry that enhances consent rather than adds to workload). Findings are primarily for improving local practice; they can inform others through analytic, not statistical, generalisation.

Approach	Outline	Assumptions	Rigour & bias checks	Process (cycle)	Key questions
Exploratory practice puzzles, not problems	learning, often data-informed, within professional learning communities or inquiry cycles. Draws on "inquiry as stance" (Cochran-Smith & Lytle) and cycles (Timperley).	and locally, using evidence about pupils drives professional learning; collaboration improves both practice and knowledge.	of existing practice. Guard with protocols for examining evidence, dissenting voices, external input and links to research literature.	interpret collaboratively (protocols) → try changes → review impact → sustain as an ongoing cycle.	show? What will we try, and how will we know if it helps?
	A sustainable form of practitioner inquiry (from language education, Allwright) that prioritises understanding "puzzles" over solving "problems" and integrates inquiry into normal pedagogy, so it enhances rather than burdens teaching and classroom life.	Understanding matters more than quick fixes; inquiry should be part of teaching, not extra to it; learners are co-researchers; sustainability and wellbeing are principles, not afterthoughts.	Risk of staying descriptive or never moving to action; ensuring normal pedagogic activities are genuinely used as inquiry. Guard with collegial discussion and treating ordinary classroom work as evidence.	Notice a puzzle ("why do...?") → involve learners as co-inquirers → use normal pedagogic activities to explore it → develop understanding collegially → let action follow understanding.	What puzzles me about what's happening here? Why is it so (rather than how do I fix it)? Can learners explore this with me, using our normal work?
Improvement science PDSA cycles / NICS	A disciplined, iterative approach to improving practice at scale, adapting Plan-Do-Study-Act cycles and networked improvement communities to education (Bryk, Gomez, Grunow & LeMahieu; Langley et al.). Focuses on the system producing outcomes.	Variation and the system, not individuals, explain most outcomes; improvement is learned through rapid, small, measured tests of change; implementation matters as much as the idea.	Chasing or gaming metrics; mistaking activity for improvement. Guard with a clear aim + measures + change ideas (driver diagrams), balancing measures, short measured cycles, and distinguishing special- from common-cause variation.	Specify the problem & aim → map the system (driver diagram) → devise change ideas → run small PDSA tests with measures → study results → adopt / adapt / abandon → scale via networks.	What system produces this result? What change might be an improvement? How will we know a change is an improvement? How do we test it small and fast?
Learning study variation theory	A hybrid of lesson study and design experiment that adds an explicit learning theory — usually variation theory — to specify the object of	Learning is discerning the critical aspects of an object of learning; what varies and what is held invariant shapes what is	Requires disciplined use of the theory, not label-dropping; pre/post measures add rigour but need valid instruments; avoid attributing gains	Identify the object of learning → pre-test to find missing critical features → design a lesson patterning variation/invariance →	What exactly should pupils discern (e.g. tolerance in making)? What are the critical features and necessary variation? Did

Approach	Outline	Assumptions	Rigour & bias checks	Process (cycle)	Key questions
Lesson study jugyō kenkyū	learning and the critical features pupils must discern. Developed by Marton, Lo and Pang. A collaborative, Japanese-origin approach in which teachers jointly study, plan, teach and analyse a “research lesson” around a shared research theme (koan) to improve teaching and pupil learning. Spread internationally by Lewis, Fernandez & Yoshida, and Dudley.	Teaching improves collaboratively and incrementally through close study of live lessons; pupil learning is observable in the lesson; expertise is collective; a “knowledgeable other” adds input.	Observe the teaching, not the teacher (avoid personal/evaluative judgement); confirmation of the plan; single lessons limit generalisation. Guard with structured observation of pupil learning, multiple observers and discussion protocols.	teach & observe → post-test → analyse against the object of learning → revise. Study curriculum & set a theme → collaboratively plan a research lesson → one teaches while others observe pupils → post-lesson discussion → revise and often re-teach → document and share.	discernment change, and how do we know? What should pupils learn, and how will we see it? What did pupils actually do and understand? How should the lesson and our teaching be revised?
Reflective practice a stance, structured by cycles	The disciplined examination of one’s practice to learn from it — a foundational stance underpinning the others rather than a single method. Schön’s reflection-in/on-action; Brookfield’s critical lenses; often structured by a cycle (e.g. Gibbs).	Professional knowing is largely tacit and enacted in action; experience alone does not teach — reflection does; practice improves by surfacing and questioning one’s framing.	Reflection can become self-affirming, superficial or merely descriptive. Guard with critical (not just descriptive) reflection, multiple lenses (self, pupils, peers, literature) and evidence beyond memory.	Frame an experience → describe it → analyse feelings, assumptions and alternatives (using a model) → draw conclusions → plan action → test in practice.	What happened, and how did I frame it? What assumptions shaped my response? How else could it be seen? What will I do differently?
Self-study of practice S-STEP / practitioner research	Practitioners (often teacher educators) systematically study their own practice to understand and improve it and to generate public knowledge; the self and one’s practice are the site of inquiry. Developed	One’s own practice is a legitimate object of rigorous study; improvement requires making tacit reasoning explicit; personal knowledge must be made public	Solipsism and self-justification are the key risks. Guard with critical friends, multiple data sources, transparency about method, and making the account public for peer critique;	Frame a question about one’s practice → collect data (journals, recordings, pupil work, colleague feedback) → analyse with critical friends → reframe and act → make the account public.	What is the tension in my practice, and how do I know? What assumptions underlie how I teach? How might I reframe it? What can others learn from this?

Approach	Outline	Assumptions	Rigour & bias checks	Process (cycle)	Key questions
	through the S-STEP community (Loughran; LaBoskey; Samaras).	and open to critique; reframing is central.	distinguish it from mere reflection.		

Alongside practical examples, this chapter provides guidance on setting up a practitioner inquiry. We discuss framing a clear question (e.g. “How does reordering my lessons on symmetry affect student understanding?”), choosing simple measures of progress (like pre- and post-lesson quizzes or student reflection notes), and reflecting on results. Each stage is portrayed as a deliberate decision. For instance, choosing whether to interview students in groups or

individually depends on class dynamics: an example we illustrate through a case where group interviews encourage shy students to speak up, whereas individual chats allow more personal insights. Throughout, tables summarise key elements, such as types of practitioner research (action research, case studies, practice-led research) and common data sources (observations, surveys, student work), with commentary linking each to practical goals.

Judging quality: validity criteria for practitioner inquiry

Because the practitioner studies their own setting, conventional notions of objectivity and generalisation apply awkwardly. Herr and Anderson’s five criteria offer a practical

framework for warranting practitioner inquiry (Herr & Anderson, 2015).

Table 2. Quality indicators in practitioner inquiry

Quality criterion	What it asks	How to strengthen it
Catalytic validity	Does the process deepen participants’ understanding of their own reality and energise them to act on and transform it?	Build in reflection that reorients participants; document shifts in the understanding and action of both researcher and participants over the cycles.
Democratic validity	Is the research done with, not on, those affected — incorporating the multiple perspectives and interests of stakeholders (including pupils)?	Collaborate with participants in framing and interpreting; include diverse and dissenting voices; ensure the problem and solutions are locally relevant.
Dialogic validity	Have the reasoning and findings been exposed to critical scrutiny by peers and the wider community, rather than settled privately?	Use critical friends and inquiry groups; present, share and publish for peer review; invite challenge to interpretations before claiming them.
Outcome validity	Did the inquiry move the problem that prompted it — and open richer new questions rather than force premature closure?	Track whether the problem genuinely shifted (not just whether activity occurred); treat successful action as spiralling into the next cycle; report what did not work.

Quality criterion	What it asks	How to strengthen it
Process validity	Is the inquiry conducted soundly, so its findings can be trusted? Are events framed from more than one perspective and is learning ongoing?	Triangulate methods, data and perspectives; keep an audit trail; use appropriate evidence rather than anecdote; avoid premature closure and single-source claims.

By the end of this chapter, you should feel equipped to begin your own inquiry into practice. Remember that practitioner research has both rigour and realism: you use systematic methods (notetaking, comparison of data) while staying grounded in your everyday teaching or policy work. We revisit the opening example and consider what the hypothetical maths teacher learned: perhaps that small group work followed by peer teaching significantly improved test scores, suggesting a refined lesson plan. In the concluding reflection, we reinforce that no outcome is “wrong” — a negative result

(e.g. attendance didn't improve) is still valuable knowledge. This chapter closes with encouragement to treat the research tools as flexible partners. In the next chapter, we shift focus to a related step: turning those initial questions or frustrations into clearly defined research problems that guide the rest of your study. Practitioner inquiry has shown us how research sprouts from real issues, and now we move on to sharpen those issues into formal problems worth investigating.

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chapter three

3. Discovering and defining research problems in education, curriculum and policy scholarship

Introduction

This chapter explores approaches to identifying and framing a researchable problem in education, curriculum and policy scholarship, and shows how the problem drives the aims, objectives and research questions.

A first choice underlies all of these: whether the problem is treated as found (a gap or discrepancy “out there”, in realist traditions) or as constructed (problem-framing is itself part of the inquiry, in interpretive and especially critical / post-structural traditions). The eight approaches below span that range; most studies blend two or three.

Every strong research project begins with a clear problem or puzzle to solve. This chapter is about how to find and refine those problems, especially within the educational and policy worlds. Often, the seed of a research problem comes from an everyday observation or question: a classroom teacher might ask, “Why are my maths students struggling with fractions?” or an educational leader might wonder, “How does a new policy on grading influence teacher morale?” These initial

hunches are valuable, but we need to turn them into precise research problems that can guide a study systematically.

First, we explore how to go from a general curiosity to a well-defined problem. Using examples, we show how an open-ended issue (“students struggle with fractions”) becomes narrowed into something researchable (“students struggled specifically on fraction equivalence problems in Unit 3, and I suspect this is due to my instructional approach”). We discuss strategies like reviewing existing literature (what have others said about learning fractions?), talking to peers, and reflecting on data (perhaps test scores or classroom video) to sharpen ideas. For instance, one case example follows a history teacher who notices grade inflation after a school policy change. Instead of simply lamenting “grades are higher”, the teacher gathers syllabi and student feedback to pinpoint that grade inflation seems tied to less challenging assignments. This discovery process is unpacked step by step.

The chapter then covers how to articulate research aims, objectives, and questions from that refined problem. We explain, with accessible language and examples, the differences: research aim is the broad goal (e.g. “to understand the effects of X on Y”), objectives are smaller sub-goals or tasks, and research questions are the specific queries guiding data collection. For example, after noticing

the grade inflation trend, the history teacher’s research questions might become: “What changes in assignment difficulty occurred after the policy change?” and “How do students perceive these changes?” We provide sample frameworks and encourage students to write multiple trial questions, then narrow down to the most focused ones.

Table 3. *Techniques for discovering and defining research problems*

Approach	Outline	Assumptions	Bias checks	Procedures	Key questions
Anomaly- & surprise-driven abductive	The problem is prompted by something that doesn't fit — a surprising result, discrepant case or puzzle in data or practice. Reasoning is abductive: inference to the best explanation.	Anomalies are informative and worth pursuing; existing frameworks are incomplete (fallibilist, discovery-oriented).	Distinguish signal from noise or artefact; resist premature explanation and hindsight pattern-seeking; treat the hunch as tentative.	Document the surprise → verify it is genuine (data quality, replication) → specify the expectation it violates → generate rival explanations → frame the problem as explaining it.	What surprised me, against what expectation? Is the anomaly real? What could explain it, and how could I test it?
Equity- & justice-driven critical	Begin from an observed inequity — differential access or attainment, marginalised voices, the hidden curriculum — and define the problem by who is disadvantaged and why.	Research should serve equity and emancipation; arrangements embed power and are not neutral; knowledge is value-laden (critical axiology).	Avoid confirming a prior political conclusion, speaking for rather than with, and deficit framing; ground in evidence and lived experience; be reflexive about power.	Identify the inequity and affected group → centre their perspectives → analyse structural causes → frame the problem as the actual-vs-just gap → consider action.	Who is disadvantaged, how, and by what arrangements? Whose voice is missing? What would a more just situation look like?
Gap-spotting literature-based	Read the field systematically to locate what is missing — neglected topics, contexts or groups; contradictory findings; replication	Knowledge accumulates and has identifiable holes; the literature is broadly sound and to be	A gap is not automatically significant; guard against selective reading, recency and English-language bias.	Scoping/systematic search → synthesis matrix (known / contested / absent) → name the gap and its	What is known, contested and absent? Why does this gap matter, and to whom? What would filling it change?

Approach	Outline	Assumptions	Bias checks	Procedures	Key questions
	needs, under-used methods. The problem is the gap.	extended (realist, incremental).	and mistaking unfamiliarity for absence. Always ask "so what?"	consequence → confirm no one has filled it.	
Policy- & reform-driven external / commissioned	The problem originates externally — a curriculum reform, assessment change, funder priority or Area of Research Interest. Common in commissioned, impact-oriented work.	Problems can legitimately be set by policy actors and stakeholders; research should be relevant and timely (pragmatic, use-oriented).	Don't uncritically adopt the commissioner's framing — interrogate it (cf. WPR); keep relevance from crowding out 'rigour'; retain analytic independence.	Read the reform/brief/ARI → restate the implied problem in researchable terms → interrogate its framing → negotiate and bound scope.	Whose problem is this, and how is it framed? Is that framing defensible? What can research actually answer? Where must I stay independent?
Problem of practice practitioner / design-based	Start from a persistent tension or aspiration in real practice — a pedagogy that misfires, an assessment that distorts learning, a workshop resource gap. Strong in action and design-based research.	Practice generates valid problems and situated knowledge; research should improve, not only understand, practice (praxeological).	Distinguish symptom from root cause; check insider assumptions and advocacy; don't inflate a personal frustration into a field-level problem.	Describe the difficulty concretely → gather local evidence → root-cause ("5 whys" / fishbone) → separate problem from solution → link to theory and literature.	What is not working, for whom, and how do I know? Is this the problem or a symptom? What would count as improvement?
Problem-as-representation WPR / policy discourse	Treat the "problem" as constituted in policy and discourse rather than pre-given; analyse how a reform represents the problem to be solved (Bacchi). Central to policy scholarship.	Problems are discursively produced, not neutrally discovered; framing shapes solutions and responsibility (post-structural).	Don't read your politics into the text or treat one representation as the only one; stay textually grounded and reflexive; weigh competing framings.	Select policy texts → ask what the problem is represented to be → surface underlying presuppositions → trace silences → consider effects and alternatives.	What is the problem represented to be? What assumptions underlie it? What is left unproblematic or silent? How else might it be framed?
Problematisation assumption-challenging	Instead of a gap, surface and challenge the assumptions a field, theory or policy takes for granted, opening a more original problem (Alvesson & Sandberg).	Fields rest on unexamined in-house or ideological assumptions; questioning these yields richer problems	Avoid straw-manning, iconoclasm for its own sake, and over-claimed novelty; evidence that the assumption is genuinely held and consequential.	Identify a dominant assumption (e.g. "D&T is practical, not academic") → articulate it → ask what follows if it is false → frame the problem as the tension exposed.	What does this field take for granted? Whose interests does it serve? What becomes visible if I suspend it?

Approach	Outline	Assumptions	Bias checks	Procedures	Key questions
Theory-driven derivation framework-first	Derive a problem by testing, extending or applying a framework to a new context (e.g. Legitimation Code Theory or social realism applied to D&T knowledge; a model of design cognition).	than gap-filling (constructivist/critical). Theory guides what is worth noticing; problems follow from a framework's tensions or untested claims (coherence with a tradition).	Beware theory-laden blindness and forcing an ill-fitting framework; seek disconfirming cases and consider rival theories; keep the phenomenon in view.	Articulate the framework → identify an untested implication or boundary condition → specify the context → frame the problem as the test/extension.	What does this theory assume that is untested here? Where might it break down? Would a rival framework frame it differently?

If there were a table listing different research problem examples with columns such as “Observation”, “Possible Problem Statement”, and “Refined Research Question”, a commentary would walk through one row in detail. For example: “Consider a row where the initial observation is ‘Students seem disengaged during group work.’ The table might suggest a problem statement: ‘Investigate factors affecting engagement in group activities.’ The refined research question could be: ‘How does group size influence

The “golden thread”: from problem to questions to design

The defined problem supplies the why; everything downstream should trace back to it in an unbroken line of

student participation in science labs?’ The commentary would explain that we take an initial broad statement and, through discussion and consideration of practical constraints, narrow it to a specific variable (group size) and context (science labs). This process is what students should mimic when using the table as a guide.” Such commentary helps readers see how a vague observation can transform into a solid research question.

sight. The problem and questions determine the paradigm, methodology and data, not the reverse.

Table 4. Components of a research problem framing²

Element	What it is & its function	Typical grammar / exemplar	Alignment test
Research problem	The gap, tension or puzzle the study addresses, and why it matters. The source of everything downstream — the why.	"Despite X, we do not know 'Y, this matters because Z." e.g. Although D&T entries have declined for over a decade, the curricular and accountability mechanisms behind the fall are not well understood, limiting effective response.	Can you state it as problem + consequence in two or three sentences?
Aim(s)	The overarching purpose — the destination. Usually, one or two statements that answer the problem's "so what".	Infinitive of purpose: "to examine / evaluate / develop / theorise..." e.g. To examine how curriculum and accountability policy has shaped participation in D&T since 2004.	Does the aim answer the problem? Is there one clear destination?
Objectives	The concrete steps that operationalise the aim — the route, and often the spine of chapters or work packages.	Action infinitives: "to identify... to compare... to analyse... to synthesise..."; specific, sequenced, achievable. e.g. to map entry trends; to analyse how reforms represented the "problem" of D&T; to relate accountability measures to entry patterns.	Do the objectives together accomplish the aim? Is each one necessary?
Research questions	The specific interrogatives the study will answer, derived from problem and aim. Their grammar signals the kind of knowledge claim.	"how / why / what is it like" (interpretive); "how much / what effect / what relationship" or hypotheses (quantitative); paired or integrated (mixed). e.g. How have successive reforms represented the "problem" of D&T? What is the relationship between accountability measures and entry patterns?	Does each question map to an objective — and is it answerable with feasible data?

² Cross-cutting tools support every approach: a conceptual framework makes the argument connecting problem to design (Ravitch & Riggan, 2017; Maxwell, 2013); scoping or systematic review maps the terrain; and researchability screens such as FINER — feasible, interesting, novel, ethical, relevant — test whether a problem is worth pursuing. Positionality and reflexivity run throughout. In emergent qualitative and post-qualitative designs, the thread is recursive, with questions refined as inquiry proceeds (Agee, 2009), but the expectation of alignment between problem, purpose, questions and design holds across paradigms.

Element	What it is & its function	Typical grammar / exemplar	Alignment test
Design, data & findings	Where the thread meets paradigm, methodology and data (the earlier chapters of this playbook): these are chosen to answer the questions, and the findings answer them in turn.	Each question → a method → a data source → a finding/chapter. e.g. WPR analysis of policy texts (Q1) and time-series analysis of entry data (Q2), integrated in the discussion.	Can you draw a clean line from each question to a method and a finding? (the examiner's "line of sight").

By the end of this chapter, you should be able to look at a situation or problem in education and meld it into a clear, researchable form. We remind readers that this refining process often takes time and iteration — drafting questions, revisiting literature, even seeking informal student feedback can all tighten the focus. We revisit our examples, demonstrating how each ended with a precise question ready for data collection. For example, the maths teacher’s general concern about fractions became the specific question of how instructional strategy affects understanding of fraction

equivalence. The history teacher’s grade inflation issue became focused on assignment difficulty and student perspective. These examples show that a well-defined problem not only directs the research but also builds the “golden thread” of coherence across a study. With a problem and set of questions in hand, the next step (Chapter 4) is to think about who will provide the data — how to choose participants. But first, take a moment to ensure your problem is firmly grounded, and as clear as possible, so that the rest of your study stands on solid ground.

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chapter four

4. Choosing participants in education, curriculum and policy scholarship

Introduction

Choosing participants (sampling) is deciding who or what to study from a wider population. Three terms anchor it: the population (all cases of interest), the sampling frame (the accessible list from which you draw) and the sample (those actually studied). The guiding question is fitness for purpose: what kind of claim do you want to make? Probability sampling (where every member of the population has a known, non-zero chance of selection) supports statistical generalisation, but it needs a full frame and numbers that small-scale educational research rarely has. Non-probability sampling (where selection is purposive or opportunistic) cannot support statistical generalisation but is the norm and is entirely legitimate when the aim is depth of understanding, theory-building or improving a particular practice. In small-scale work the honest goal is usually analytic or theoretical generalisation, or transferability, not statistical representativeness. Whatever the strategy, choose it deliberately, justify it against the research questions, and be transparent about its limits.

After defining a clear research problem and questions, the next crucial step is deciding who will be involved in answering them. This chapter focuses on selecting participants for educational and policy research. Whether you plan to interview students, survey teachers, or analyse school documents, the choices you make about participation affect your study's validity and ethics. We begin by discussing the two main concerns: relevance (ensuring participants can best inform your question) and feasibility (what is practical given your time and resources).

To make these ideas concrete, we look at examples. Suppose you're studying how middle school teachers implement a new curriculum. You might decide to interview the teachers who actually taught the new content, rather than teachers from other subjects. The chapter walks through this decision: you look at who has direct experience (relevance) and then consider how many interviews you can realistically schedule (feasibility). We also introduce sampling strategies like purposive sampling (choosing specific people for a reason) and convenience sampling (go with who's available),

explaining the strengths and drawbacks of each. Another example addresses a school district policy study: a researcher interested in the effects of a new lunch programme might include students from two different schools, rather than all grades at one school, to capture broader perspectives.

We also cover practical details: how to recruit participants respectfully (writing inviting emails, explaining the study's purpose in simple terms) and the role of gatekeepers (like principals or department heads). A cautionary example might

show what happens if a researcher fails to get proper permission from a school, leading to disruptions. The chapter emphasises diversity and representation too: if researching a district policy, it's important to include voices from different backgrounds (e.g. various grade levels, socio-economic statuses, or urban vs rural schools) to avoid biased results. Tables in this chapter might list sampling methods (e.g. random sampling, stratified sampling) or criteria for inclusion and exclusion of participants. The commentary on such tables will explain, for each entry, why a researcher might choose that option.

Table 5. *Probability sampling: selection by chance, for statistical generalisation*

Approach	How it works	Affordances	Constraints	Fit for educational research
Simple random sampling	Every member of the population has an equal, independent chance of selection; draw at random (e.g. a random-number generator) from a complete sampling frame.	Minimises selection bias; supports unbiased statistical generalisation and inferential statistics; the benchmark against which other designs are judged.	Needs a complete, accurate sampling frame (often unavailable in schools); can miss small subgroups by chance; says nothing about non-response.	Rarely feasible: a small random draw is still too small to be representative or adequately powered, and a full frame is seldom available.
Systematic sampling	Select every k-th case from an ordered frame after a random start ($k = \text{population} \div \text{desired sample size}$).	Simple and quick; spreads the sample evenly across the frame; approximates random sampling without listing everyone individually.	Biased if the frame has a hidden periodic pattern aligned with k ; still needs an ordered frame; shares random sampling's small sample limits.	Occasionally useful (e.g. from a class register or pupil list), but the representativeness gain is marginal at very small n .
Stratified (random) sampling	Divide the population into strata (e.g. year group, gender, prior attainment) and randomly sample within each	Guarantees representation of key subgroups; more precise than simple random for the same n ; enables planned subgroup comparison.	Requires knowing stratum membership in advance and a frame; more complex; over-sampling needs weighting for population estimates.	The most useful probability design at modest scale — if a frame exists and subgroup coverage matters — but each stratum quickly becomes tiny.

	— proportionately, or over-sampling small groups.		
Cluster & multi-stage sampling	Randomly sample naturally occurring groups (clusters) — e.g. schools or classes — then study all, or a further random sample of, their members (multi-stage).	Efficient when the population is dispersed and no individual frame exists; a frame of clusters (schools) is far easier to obtain; practical for reaching pupils via schools.	Higher sampling error (people within a cluster resemble one another — the “design effect”); precision needs more clusters, not more people per cluster.
			A single class or school is effectively one cluster, so findings can’t be generalised beyond it statistically; useful for access, not representativeness.

Table 6. *Non-probability sampling: selection by judgement or access — the norm at small scale*

Approach	How it works	Affordances	Constraints	Fit for educational research
Convenience / opportunity	Select cases that are readily accessible — your own class, a nearby school, willing colleagues.	Fast, cheap and practical; often the only feasible option; fine for pilots, exploratory work and instrument testing.	High risk of selection bias; the sample may differ from the wider population in unknown ways; a weak basis for any generalisation.	Very common and defensible if its limits are acknowledged and claims kept modest — don’t present it as representative.
Purposive / purposeful	Deliberately select information-rich cases fitting the research purpose. Sub-types: typical-case, extreme/deviant-case, critical-case, maximum-variation and homogeneous sampling.	Aligns the sample tightly with the research questions; yields depth and insight; the workhorse of qualitative educational research; flexible.	Depends on the researcher’s judgement (which can smuggle in bias); not statistically generalisable; demands transparency about selection criteria.	The default for small-scale qualitative work — choose and justify the sub-type against your aim (e.g. maximum variation to map a range of views; critical case to test a proposition).
Quota sampling	Set quotas for key subgroups (the non-probability analogue of stratified sampling) and fill them by convenience until each is met.	Ensures subgroup coverage without a frame; quick; useful when rough representativeness of known characteristics is wanted.	Selection within quotas is non-random, so bias remains; only controls for the characteristics chosen; no statistical generalisation.	Useful when you need spread across, say, phases or subjects but lack a frame — better subgroup coverage than pure convenience.
Snowball / chain-referral	Existing participants refer others who meet the criteria, building the sample through networks.	Reaches hard-to-access, hidden or dispersed populations; builds trust via referral.	Samples cluster within networks (homophily), missing isolated cases; biased toward	Valuable for niche populations common in specialist fields — e.g. teachers of a rare or

Volunteer / self-selection	Participants opt in following an open invitation (e.g. an email or social-media call).	Easy to run; ethically clean (participation is clearly voluntary); can reach motivated, engaged participants.	the well-connected; the population is hard to define. Volunteers differ systematically from non-volunteers (self-selection bias) — often more motivated or opinionated; representativeness is unknown.	emerging subject specialism — where no list exists. Practical for surveys and interviews but interpret findings as the views of those willing to take part, not of the population.
Theoretical sampling grounded theory	Sampling is guided by the emerging analysis; further cases are chosen to develop and test emerging categories, continuing until saturation.	Directs data collection where it is theoretically most productive; central to rigorous theory-building; responsive and iterative.	Cannot be fully planned in advance (complicating ethics approval and timelines); demands analytic skill; sample size is emergent, not fixed.	The principled choice when the aim is to build theory; requires a flexible design and iterative data collection.

Table 7. *How many, and what can I claim? Sample size & generalisation?*

Consideration	Guidance for small-scale educational research
Statistical vs analytic / theoretical generalisation	Statistical generalisation (sample → population) needs probability sampling and adequate n, rarely available at small scale. Instead aim for analytic or theoretical generalisation — to concepts and theory (Yin, 2018) — or transferability, giving thick description so readers can judge relevance to their own setting (Lincoln & Guba, 1985). State which you are claiming.
Saturation (qualitative)	In many qualitative designs, sample size is judged by saturation — the point at which new data add little new insight. Treat it as a reasoned, reported judgement rather than a magic number, and note it does not apply to every design (e.g. interpretative phenomenological analysis (IPA) seeks depth per case, not saturation).
Rules of thumb (qualitative)	Indicative only: IPA studies often use ~3–6 participants; interview studies commonly 6–20+, focus groups ~3–6 groups; grounded theory 20–30+. Fit the number to the question, the homogeneity of the sample and the depth of data — not to convention.

³ In practice, strategies are often combined: for example, purposive selection followed by snowballing to reach a niche group, or a convenience sample stratified by phase. What matters is not the label but the reasoning: define the population and unit of analysis, choose a strategy that fits the questions, report the criteria and the achieved sample transparently, and match your generalisation claim to what the design can bear. Sampling is also an ethical act (who is included and excluded, and how voluntarily, connects directly to the ethics chapter) and it is part of the "golden thread", since the participants must be able to answer the research questions the problem set.

Power & precision (quantitative)	For inferential statistics, run an a priori power analysis: small samples are usually underpowered to detect anything but large effects. Where numbers are fixed and small, prioritise description, effect sizes and confidence intervals over significance tests (see the quantitative-analysis chapter).
Representativeness vs depth	You usually cannot maximise both. Small-scale work trades breadth and representativeness for depth, access and feasibility — make that trade deliberately and align it with your aims.
Access, gatekeepers, attrition & ethics	The achievable sample is shaped by gatekeepers (heads, parents), consent and drop-out. Over-recruit modestly to allow for attrition, and remember that sampling decisions are also ethical decisions about voluntariness and inclusion (see the ethics chapter).

Choosing the right participants is a balance of strategy and pragmatism. In this chapter’s conclusion, we revisit key lessons with concrete recommendations. For example, we might remind readers that if your question is very specific (e.g. “What challenges do Year 11 (ages 15–16 years) mathematics teachers face with the new exam format?”), your participant pool should match (Year 11 maths teachers, not another year group or subject). We also highlight that ongoing reflection is important: if early data suggest a missing perspective, you may need to go back and sample additional participants (say, adding first-year teachers). The

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chapter wraps up by stating that thoughtful participant selection lays the groundwork for strong data. With participants identified, the next chapter (5) deals with how to engage them ethically; that is, collecting data responsibly and respectfully. But first, pause to consider: does your participant group really align with your questions? Have you included a range of voices that will make your findings credible? A well-chosen participant group is like a strong foundation for a building; everything you learn will stand upon it.

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chapter five

5. Research ethics in practice for education, curriculum and policy scholarship

Introduction

Research ethics is experienced in two registers. Procedural ethics is the up-front, formal layer — approval from a research ethics committee, consent forms, data-management plans. Ethics in practice (or microethics) is the stream of “ethically important moments” that arise unpredictably in the field, where what is needed is judgement, not a form (Guillemin & Gillam, 2004). The British Educational Research Association’s (BERA) guidelines (2024) are deliberately principle-based and non-prescriptive rather than a checklist: they set out researchers’ responsibilities (to participants, to sponsors and stakeholders, to the community of researchers, and in publication and dissemination) and expect these to be applied with integrity and reflexivity. The fifth edition strengthens attention to structural inequality and the Equality Act 2010, to participants’ right to participation (not only protection), to inclusivity for marginalised and vulnerable groups, and to newer terrain such as internet-mediated research, AI and environmental sustainability. Ethical practice is therefore continuous and situated: a

stance sustained across the whole study, not a hurdle cleared at the start.

Research in educational settings involves real people, and human subjects deserve respect, safety, and fairness. Chapter 5 dives into research ethics — the principles and practical steps that protect participants and preserve trust. We start by explaining why ethics matters: beyond committees and forms, ethical practice is about humanising your research. For example, consider a scenario where a teacher-researcher wants to video students to analyse classroom interaction. Ethics means asking: Do those students (and their parents) know what the videos will be used for? Are they comfortable? Chapter 5 will guide you through such questions.

We define key ethical concepts, like informed consent (participants know about the study and agree to join), confidentiality (identities are protected), and non-maleficence (minimising harm). We use relatable examples: perhaps a curriculum developer conducting surveys online must ensure

responses are anonymous to prevent student embarrassment. Another scenario could involve a principal researching school discipline policy; the chapter walks through how the principal must avoid pressuring staff to participate, even if it's all within the same school. We also discuss ethics review committees (University Research

Ethics Committees — UREC — or equivalent), demystifying the process of ethical approval with tips on what committees look for in proposals. A table in this chapter might list common ethical issues (like privacy, power dynamics, data security) alongside strategies to address them.

Table 8. Ethical perspectives: the lenses researchers reason with

Perspective	Core principle	What it foregrounds (and its blind spot)	Question it prompts in practice	Key sources
Consequentialist utilitarian / outcomes	Judge actions by their outcomes — maximise benefit and minimise harm across all those affected.	Foregrounds a harm–benefit balance and the wider social value of the research. Blind to injustices done to individuals when the aggregate outcome is “worth it”, and consequences are hard to predict.	Do the likely benefits of this study justify the burdens and risks to these participants?	Hammersley & Traianou (2012); Farrimond (2013).
Deontological duty & rights	Some duties and rights hold regardless of outcomes — respect persons as ends, honour autonomy, keep promises.	Foregrounds informed consent, honesty, dignity and children’s rights (United Nations Convention on the Rights of the Child, UNCRC). Can be rigid when duties conflict, and rule–following may stand in for judgement.	Am I respecting each participant’s autonomy, rights and dignity — whatever the payoff?	United Nations (1989); Beauchamp & Childress (2019).
Virtue ethics character & phronesis	Ethical conduct flows from the researcher’s character and practical wisdom (phronesis) — being trustworthy, honest and just.	Foregrounds integrity, reflexivity and situated judgement over rule–following. Offers little concrete direction in a hard case and depends on the researcher’s formation.	What would a researcher of integrity do here — and what does this choice make me?	Macfarlane (2009).
Ethics of care relational	Morality is grounded in relationships and responsiveness to particular others — attentiveness, responsibility, competence, responsiveness — not abstract rules.	Foregrounds the researcher–participant relationship, reciprocity, voice and context. Risks partiality and boundary-blurring and is hard to standardise or scale.	What do my relationships and responsibilities to these people require of me now?	Gilligan (1982); Noddings (2013).

Perspective	Core principle	What it foregrounds (and its blind spot)	Question it prompts in practice	Key sources
Principlism the four principles	Balance four mid-level principles — respect for autonomy, beneficence, non-maleficence and justice.	Foregrounds a shared, portable vocabulary bridging theory and practice (widely used by ethics committees). Principles can conflict with no fixed ranking and are biomedical in origin.	How do autonomy, benefit, avoiding harm and fairness weigh in this decision?	Beauchamp & Childress (2019).
Decolonising & feminist power & justice	Interrogate whose knowledge and interests research serves; centre power, reciprocity, self-determination and justice; research with, not on, communities.	Foregrounds structural inequality, extraction, representation and benefit-sharing (aligned with BERA's fifth-edition emphases). Demanding to enact fully and easily tokenised.	Whose interests does this research serve — and does it give back, or extract?	Tuhiwai Smith (2021); Brooks, te Riele & Maguire (2014).

Table 9. *Ethics in practice: challenges, compromises, risks and mitigations*⁴

Challenge / domain	Typical tension or compromise	Risks	Mitigations	BERA (2024) anchor
Informed consent & assent children & young people	Truly informed, voluntary consent is hard with minors: pupils may not grasp the study or feel free to refuse. Usually parental/guardian consent plus child assent; and consent is a process, not a one-off signature.	Tokenistic consent; children feeling unable to say no; consent that fails to cover later uses of the data.	Age-appropriate information; child assent alongside guardian consent; ongoing (process) consent revisited during the study; make refusal genuinely safe and consequence-free.	Consent; transparency

⁴ These perspectives are complementary lenses, not a menu to choose once: most researchers reason with several at once, and BERA's principle-based approach expects judgement rather than rule-following. Procedural approval (a research ethics committee or institutional review) is necessary but not sufficient: it cannot anticipate the situated dilemmas of fieldwork, which is why reflexivity and positionality run throughout. The statutory backdrop in the UK includes the UK GDPR and Data Protection Act 2018, the Equality Act 2010, and safeguarding duties (Keeping Children Safe in Education). This chapter connects to the rest of the series: ethical alignment is part of the "golden thread" (problem, questions and design must be ethically as well as methodologically sound), and insider practitioner research (action research, lesson study) carries particular ethical weight because the researcher holds power over the very people being studied.

Challenge / domain	Typical tension or compromise	Risks	Mitigations	BERA (2024) anchor
Gatekeepers & access	Heads, trusts and parents grant access and may consent on pupils' behalf; but institutional consent is not individual consent, and gatekeepers can also constrain what is studied or reported.	Treating gatekeeper approval as participant consent; coercion via institutional authority; suppression of unwelcome findings.	Secure both gatekeeper and individual (assent) consent; agree reporting rights up front; keep participation voluntary beneath the institutional agreement.	Consent; responsibilities to sponsors & stakeholders
Insider / practitioner research dual role	Teacher-researchers studying their own pupils blur roles — holding power to both assess and research the same people. Heightened in action research and lesson study, where teaching and data collection intertwine.	Real or perceived coercion; pupils consenting to please the teacher; confidentiality strained by the ongoing relationship; insider bias.	Independent information/consent processes; separate researcher and assessor roles where possible; state clearly that grades don't depend on participation; reflexivity and critical friends.	Consent; harm; (BERA insider teacher-researcher case study)
Power & voluntariness right to withdraw	Power asymmetries (adult-child, teacher-pupil, researcher-participant) undermine genuinely free choice, and the stated right to withdraw can be hard to exercise in practice.	Participation that is not genuinely voluntary; participants not knowing how or when to withdraw; data used after withdrawal.	Make withdrawal easy, explained and time-bounded (state until when data can be withdrawn); avoid incentives that unduly induce; reduce status cues.	Right to withdraw; incentives; consent
Confidentiality & anonymity small samples	Promised anonymity is hard where a school, department or pupil is identifiable from context; acute in small-cohort subjects and single-site studies ("jigsaw" identification).	Deductive disclosure of individuals or schools; reputational harm; a broken promise of confidentiality.	Pseudonymise; aggregate or blur identifying detail; member-check quotes; be honest at the consent stage about the limits of anonymity.	Privacy & data storage; publication & dissemination
Safeguarding & disclosure limits of confidentiality	A promise of confidentiality cannot be absolute: safeguarding duties override it if a child is at risk. Participants must understand this before taking part.	Over-promising confidentiality; mishandling a disclosure; harm from failing to act on a concern.	State the limits of confidentiality up front; know the setting's safeguarding lead and procedures (Keeping Children Safe in Education, KCSIE); hold a disclosure protocol; act on concerns.	Disclosure; harm arising from participation
Data protection & storage	Personal and special-category data must be handled lawfully under UK GDPR / DPA 2018 (lawful basis, minimisation, security, retention) which constrains sharing, reuse and open data.	Insecure storage; excessive collection; unclear retention; unlawful reuse or transfer; re-identification.	Data-management plan; lawful basis and data minimisation; encryption and access control; defined retention and disposal; institutional data protection officer (DPO) advice.	Privacy & data storage

Challenge / domain	Typical tension or compromise	Risks	Mitigations	BERA (2024) anchor
Visual, workshop & artefact data	Photographs and video of pupils making, and identifiable design portfolios or products, are powerful data but heighten consent and safeguarding demands — and images are hard to anonymise.	Identifiable images of minors; loss of control over image use; consent that doesn't extend to dissemination.	Specific consent for image capture and for each use; anonymise where feasible (framing, blurring); secure storage; renew consent for reuse and dissemination.	Consent; privacy & data storage; dissemination
Online, social media & AI internet-mediated research	The public/private boundary online is blurred (is a forum post “published” or private?); consent for scraped data is impractical; and generative AI raises new issues of provenance, participant data and authorship.	Using data participants consider private; re-identification; feeding personal data into third-party AI tools; opaque AI processing.	Treat online contexts as potentially private; seek consent where feasible; don't input identifiable data into AI tools; be transparent about AI use; consult BERA's AI-ethics case study.	Consent; privacy & data storage; online research
Harm, benefit & reciprocity burden	Research can burden already-stretched teachers and pupils and extract data without giving back; “does it benefit participants?” often gets less attention than avoiding harm.	Workload and emotional burden; extractive, one-way research; raising expectations that go unmet.	Minimise burden; design reciprocity (feedback, resources, shared findings); honour participants' right to benefit and to participate (a fifth-edition emphasis); manage expectations honestly.	Harm arising from participation; responsibilities to participants & community

The conclusion of this chapter reaffirms that ethical considerations are not mere bureaucracy but integral to quality research. We might summarise by listing the simplest commitments you make to your participants: “Your participants should always know they are part of a study and understand what that involves”; “Their answers are confidential and will be reported carefully”; and “You will treat all findings objectively, even if inconvenient.” Readers are reminded that reflecting on ethics is ongoing — as new questions arise, revisit consent forms or data protections. We

conclude with an example revision: imagine that during a study you notice a pattern that might identify a participant (perhaps a unique story stands out). The wise move is to anonymise or even omit that piece of data to honour confidentiality. This chapter closes by encouraging researchers to view ethics as flexibility and care: design your study to maximise benefits (knowledge gained, improved practice) while minimising any discomfort for participants. In the next chapter, we will turn to crafting our actual

arguments and analysis, secure in the knowledge that ethical principles have guided how we gathered our data.

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chapter six

6. Argumentation and discourse in education, curriculum and policy scholarship

Introduction

Argumentation (the practice of advancing, justifying, and contesting claims) is woven through every layer of education. Curriculum documents argue for what is worth knowing; policy texts justify reform; consultation processes stage disagreement; and classrooms are themselves sites of reasoning, where teachers and students make, warrant, and challenge claims. Researchers in education, curriculum, and policy studies therefore need analytic frameworks that can make the structure, quality, and work of argument visible. This chapter brings together the major frameworks used for that purpose.

The approaches catalogued here descend from distinct intellectual traditions, and it helps to hold three broad families in view. The first treats argument as a product: a structure of claims and support that can be anatomised, as in Toulmin's (1958/2003) model of *claim, grounds, warrant, and backing*, Freeman's (2011) *dialectical extension* of that model; and Walton, Reed, and Macagno's (2008) catalogue of *argumentation schemes* with their attached *critical*

questions. The second treats argumentation as a procedure: a rule-governed exchange between parties, as in van Eemeren and Grootendorst's (2004) *pragma-dialectics* and, in a more normative register, Habermas's (1984) account of *discourse oriented to rational consensus*. The third treats argument as a *rhetorical process*: an audience-directed movement toward assent, running from Aristotle's (ca. 350 BCE/2007) appeals to *ethos, pathos, and logos*, through Perelman and Olbrechts-Tyteca's (1958/1969) *New Rhetoric*, to Fisher's (1987) *narrative paradigm*, in which stories themselves function as reasons.

Cutting across these families sits a fourth, critical tradition (Fairclough's (2003) critical discourse analysis and Bacchi's (2009) "What's the Problem Represented to be?" approach) which asks not whether an argument is well formed or persuasive, but what ideological work it performs: whose interests it serves, what it presupposes, and what it silences. Several further distinctions matter when selecting among the frameworks. Some are primarily descriptive (mapping how people actually argue), others normative (judging how they

ought to). Some operate at the micro level of a single inference; others link texts to macro-level relations of power. And some model the lone arguer, while others require dialogue between parties.

No single framework does all of this work. The right choice depends on the analytical task at hand; and the approaches can often be *productively layered* rather than substituted, as the companion table below illustrates. The affordances/constraints columns are intended to support selection of the most appropriate approach, or combination of approaches, for a given analytical task. Table 10 outlines ten common approaches used in education, curriculum and policy literature, Table 11 sets out the argument phase for each, and Table 12 provides a glossary of terms.

Now that we have data from participants, the next task is making sense of it and building arguments. Chapter 6 introduces argumentation (the art of crafting claims supported by evidence) and discourse analysis (a method for exploring how language and communication shape ideas in educational settings). We begin by framing argumentation: any research report is, in essence, an argument that your findings are valid and meaningful. For example, if your study

shows that project-based learning improved student motivation, you will need to argue why this result is reliable and significant. We explain how to structure an argument like a narrative — with a clear point (thesis), supporting evidence (data quotes, statistics), and logical connections (explanations of why evidence matters).

To make these ideas concrete, we walk through examples. Suppose a researcher observes classroom discussions to understand student engagement. One argument might be: “Students who ask questions significantly increase peer participation,” supported by quotes from transcripts. We show how to cite those quotes carefully, avoiding bias (not cherry-picking only enthusiastic examples) and how to link them back to research questions. Then, we pivot to discourse analysis. Here, the focus is on how educational policies and practices are talked about in texts or conversations. For instance, analysing a school board meeting transcript to see how “inclusion” is framed — is it about classroom seating, support materials, or something else? We provide a practice example: analysing a policy document to find what metaphors (like “raising the bar” or “closing the gap”) it uses. We break down the steps: identifying patterns, coding segments of text, and interpreting what they imply.

Table 10. Outline of common models of argumentation, their theorists, foci, uses, affordances, constraints and sources

Approach	Theorists	Core Focus	Typical Use	Affordances	Constraints	Sources
Argumentation Schemes ⁵	Douglas Walton, Chris Reed, & Fabrizio Macagno	Catalogues of recurring patterns of everyday reasoning (e.g. argument from authority, from consequence) with associated critical questions.	Applied in studies of student and teacher reasoning, and in coding policy justifications by scheme type.	Fine-grained, empirically grounded catalogue; built-in “critical questions” make it well suited to systematic corpus coding.	Scheme selection/matching can be subjective between coders; not designed to surface macro-level power or ideology.	Walton, D., Reed, C., & Macagno, F. (2008). <i>Argumentation schemes</i> . Cambridge University Press.
	Aristotle	Persuasion through appeals to credibility, emotion, and logic.	Used to analyse policy rhetoric, ministerial speeches, and how curriculum reforms are publicly justified.	Captures the persuasive, audience-directed dimension of public argument; intuitive vocabulary for rhetorical analysis.	Descriptive rather than evaluative; offers no systematic method for judging argument quality or detecting fallacy.	Aristotle. (2007). <i>On rhetoric: A theory of civic discourse</i> (G. A. Kennedy, Trans.; 2nd ed.). Oxford University Press.
Critical (CDA) ⁶	Norman Fairclough	Examines language as social practice, linking texts to power relations and ideology at micro (textual), meso (discursive practice), and macro (social) levels.	Widely used to analyse curriculum documents, policy texts, and classroom discourse for ideological work and power effects.	Flexible across text types and scales; strong at linking micro textual choices to macro power/ideology questions.	Methodologically eclectic — can appear subjective without a tight coding protocol; not focused on the internal logical structure of argument.	Fairclough, N. (2003). <i>Analysing discourse: Textual analysis for social research</i> . Routledge.

⁵ Perelman & Olbrechts-Tyteca and **Walton** are the two most common “argumentation theory proper” alternatives to Toulmin in the broader argumentation studies literature, and both have applied education–research uptake (particularly Walton’s schemes in studies of student reasoning).

⁶ Bacchi’s WPR and **Fairclough’s CDA** are less “argumentation models” in the classical sense and more discourse-analytic frameworks: but they are the dominant alternatives when the object of study is policy text rather than spoken/written argument in the Toulminian sense.

Approach	Theorists	Core Focus	Typical Use	Affordances	Constraints	Sources
Dialectical Theory of Argument Structure	James B. Freeman	Extends Toulmin by modelling how warrants and backing are themselves argued for, addressing regress problems in justification.	Used in more formally oriented studies of curriculum warrant structures and epistemic justification in subject rationales.	Addresses Toulmin's regress problem directly; useful where the justification <i>behind</i> a warrant is itself contested.	Technically demanding and formal; limited uptake outside specialist argumentation-theory circles, so less legible to general education audiences.	Freeman, J. B. (2011). <i>Argument structure: Representation and theory</i> . Springer.
	Walter Fisher	People are fundamentally storytellers; arguments are judged by narrative coherence and fidelity, not just logic.	Used to analyse how policy actors and teachers construct persuasive narratives about reform, decline, or "crisis" in a subject area.	Captures the emotional and values-laden "story" dimension of reform rhetoric that purely logical models miss.	Coherence/fidelity criteria are inherently subjective; offers little purchase on formal validity or fallacy detection.	Fisher, W. R. (1987). <i>Human communication as narration: Toward a philosophy of reason, value, and action</i> . University of South Carolina Press.
Pragma-Dialectics	Frans van Eemeren & Rob Grootendorst	Models argumentation as a rule-governed critical discussion aimed at resolving a difference of opinion.	Used to evaluate the soundness (and fallacies) of policy debates, consultation responses, and curriculum committee deliberation.	Rigorous and rule-based; strong for identifying fallacies and evaluating dialectical soundness of multi-party exchange.	Idealised model of "reasonable" discussion; can feel rigid or artificial when applied to messy, adversarial policy debate.	van Eemeren, F. H., & Grootendorst, R. (2004). <i>A systematic theory of argumentation: The pragma-dialectical approach</i> . Cambridge University Press.
The New Rhetoric ⁸	Chaim Perelman & Lucie	Argumentation as audience-directed persuasion;	Applied to policy documents and curriculum white	Handles value-based and quasi-logical argument well; useful	Less precise than formal models; harder to	Perelman, C., & Olbrechts-Tyteca, L. (1969). <i>The new</i>

⁷ Habermas and **Fisher** sit further from formal argumentation theory but are frequently invoked in curriculum-policy scholarship concerned with legitimacy, deliberation, and the narrative construction of reform.

⁸ **Perelman & Olbrechts-Tyteca** and Walton are the two most common "argumentation theory proper" alternatives to Toulmin in the broader argumentation studies literature, and both have applied education-research uptake (particularly Walton's schemes in studies of student reasoning).

Approach	Theorists	Core Focus	Typical Use	Affordances	Constraints	Sources
	Olbrechts-Tyteca	emphasises how arguers adapt to a "universal audience".	papers where consensus-building language is analysed.	where consensus, not proof, is the aim (e.g. green/white papers).	operationalise as a replicable coding scheme across a corpus.	<i>rhetoric: A treatise on argumentation</i> (J. Wilkinson & P. Weaver, Trans.). University of Notre Dame Press.
Theory of Communicative Action / Discourse Ethics⁹	Jürgen Habermas	Rational consensus emerges through undistorted, non-coercive dialogue oriented to mutual understanding.	Underpins deliberative and democratic models of curriculum-making and stakeholder consultation in policy studies.	Strong normative grounding for evaluating the <i>legitimacy and fairness</i> of a consultation or deliberative process.	Highly idealistic — assumes conditions of undistorted communication rarely present in real policymaking; abstract and hard to operationalise empirically.	Habermas, J. (1984). <i>The theory of communicative action</i> (Vol. 1; T. McCarthy, Trans.). Beacon Press.
Toulmin's Model of Argument¹⁰	Stephen Toulmin	Analyses arguments as claim, grounds, warrant, backing, qualifier, and rebuttal — a practical, non-formal logic.	Widely used to analyse curriculum justifications, teacher reasoning, and student argumentation in science/D&T education.	Accessible and teachable; maps directly onto real reasoning without formal logic training; good "first pass" structural tool.	Treats argument as a single-arguer structure; doesn't model dialogue between parties or how warrants themselves get justified; weak on power/ideology.	Toulmin, S. (2003). <i>The uses of argument</i> (Updated ed.). Cambridge University Press. (Original work published 1958)
What's the Problem	Carol Bacchi	Treats policy texts as constructing ("problematising") the issues they claim to solve; analyses	A leading approach in critical education policy analysis, examining how curriculum and assessment policy	Excellent for exposing tacit problem representations, silences, and subjectification	Not designed to assess argument validity or soundness; close, iterative reading across	Bacchi, C. (2009). <i>Analysing policy: What's the problem represented to be?</i> Pearson Education Australia.

⁹ **Habermas** and Fisher sit further from formal argumentation theory but are frequently invoked in curriculum-policy scholarship concerned with legitimacy, deliberation, and the narrative construction of reform.

¹⁰ **Toulmin** remains the default in education research because it is practical and maps well onto classroom and curriculum reasoning without requiring formal logic training.

Approach	Theorists	Core Focus	Typical Use	Affordances	Constraints	Sources
Represented to be? (WPR) ¹¹		presuppositions, silences, and effects.	frame problems (e.g. "skills gaps", "standards").	effects that argument-focused models never surface.	silences is time- and labour-intensive.	

Phases and Stages of Argument, by Approach

A companion table to the reference guide. Each row sets out the internal sequence (the phases, stages, elements, or analytical moves) proper to each approach. The models are not commensurable: some describe the *anatomy of a single argument* (Toulmin, Freeman, Walton), some the *procedure of a discussion* (pragma-dialectics, Habermas), some the *stages of an analysis* (WPR, CDA), and some the *movement of persuasion* (Aristotle, Perelman, Fisher). Reading across a row therefore gives that model's own logic; reading down a column does not imply equivalence between cells. Table 11 presents the argumentation phases or stages for each of the ten models outlined in Table 10, and Table 12 provides a glossary defining the terms for each of the models.

Notes on use:

¹¹ **Bacchi's WPR** and Fairclough's CDA are less "argumentation models" in the classical sense and more discourse-analytic frameworks: but they are the dominant alternatives when the object of study is policy text rather than spoken/written argument in the Toulminian sense.

column by accident of sequence, not analogy. The table should be read row-wise rather than by column.

Table 11. *Phases of argumentation for each of the ten models commonly used in education, curriculum, and policy literature*

Approach	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Argumentation Schemes (Walton) (evaluation of a defeasible inference)	Identification: locating the argument in its dialogue context and type	Scheme matching: classifying the inference against the catalogue (e.g. from expert opinion, from consequences)	Premise articulation: making the scheme's major and minor premises explicit	Critical questioning: posing the scheme's attached critical questions	Burden of proof: assessing whether the questions are answered and the presumption shifts	Evaluation: provisional acceptance, defeat, or suspension of the conclusion
Aristotelian Rhetoric (construction and delivery of a persuasive case; the <i>dispositio</i>)¹²	Exordium: securing attention and goodwill (ethos established)	Narratio: statement of the facts of the case	Partitio / Proposition: announcement of the thesis and points at issue	Confirmatio: proofs advanced (logos, supported by ethos and pathos)	Refutatio: anticipation and rebuttal of opposing arguments	Peroratio: summation and final emotional appeal (pathos)
CDA (Fairclough) (three-dimensional analysis of a communicative event)	Description: linguistic analysis of the text (vocabulary, grammar, cohesion, modality)	Interpretation: analysis of discursive practice: production, distribution, and consumption of the text; intertextuality and interdiscursivity	Explanation: analysis of social practice: the ideological and power relations the discourse sustains or transforms	<i>(Later dialectical-relational version:)</i> focus on a social wrong → identify obstacles to addressing it → ask whether the social order "needs" the wrong → identify possibilities past the obstacles		
Freeman (Dialectical Theory of Argument)	Thesis: a proponent asserts a claim	Basic dialectical questions: a	Proponent's answers: each	Diagramming: the exchange is	Regress handling: warrants/backing	Evaluation: assessment of the

¹² The **Aristotelian** row uses the classical *dispositio* (arrangement) as the phased element, since the three appeals (*ethos*, *pathos*, *logos*) are resources deployed across all phases rather than stages in themselves.

Approach	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Structure (dialectical reconstruction of macrostructure)		challenger asks: acceptability? relevance? ground adequacy? need for rebuttal?	answer generates a structural element (premises, linked or convergent support, counter-rebuttals)	rendered as macrostructure (serial, linked, convergent, divergent)	are themselves argued for, where challenged	completed structure's adequacy
Habermas (Communicative Action / Discourse Ethics) (redemption of validity claims in discourse)	Communicative offer: a speech act implicitly raises four validity claims (comprehensibility, truth, rightness, sincerity)	Problematization: a hearer challenges one or more claims; naive consensus breaks down	Entry into discourse: participants suspend action and thematise the contested claim under ideal speech conditions	Exchange of reasons: only the "unforced force of the better argument" operates	Universalisation test (U): norms are valid only if acceptable to all affected	Rationally motivated consensus: restored agreement, or continued dissensus, as outcome
Narrative Paradigm (Fisher) (assessment of stories as reasons)	Narration: the account is offered as a story with characters, sequence, and moral	Coherence test (narrative probability): does the story hang together structurally, materially, and characterologically?	Fidelity test (narrative rationality): does it "ring true" against the values and experiences of the audience (the <i>logic of good reasons</i>)?	Adherence: acceptance or rejection of the story as a basis for belief and action	—	—
Pragma-Dialectics (ideal procedure of a critical discussion)	Confrontation stage: a difference of opinion is externalised	Opening stage: parties agree material and procedural starting points and allocate burden of proof	Argumentation stage: the protagonist defends the standpoint against the antagonist's critical doubt	Concluding stage: parties determine whether the difference is resolved and, in whose favour,	—	—
The New Rhetoric (movement toward audience adherence)	Establishing communion: securing shared starting points (facts, truths,	Audience construction: framing the argument for the	Selection: choice of which data and values to make present (<i>présence</i>)	Argumentative techniques: association (quasi-logical, reality-based,	Amplification and ordering: arrangement to intensify adherence	Adherence: the audience's strengthened assent as the

Approach	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
	presumptions, values, hierarchies)	particular or universal audience		example/analogy) and dissociation of concepts		criterion of success
Toulmin's Model (anatomy of an argument)	Claim: the conclusion advanced	Grounds / Data: facts adduced in support	Warrant: the (usually implicit) inferential licence from grounds to claim	Backing: the authority supporting the warrant itself	Qualifier: the modal strength of the claim ("presumably", "in most cases")	Rebuttal: conditions under which the claim would not hold
WPR (Bacchi) (interrogation of a policy's problematisation)	Q1: What is the problem represented to be in the policy?	Q2: What presuppositions and assumptions underlie this representation?	Q3: How has this representation come about (genealogy)?	Q4: What is left unproblematic; where are the silences; could the problem be thought otherwise?	Q5: What effects (discursive, subjectification, lived) are produced?	Q6 (+ step 7): How is the representation produced, disseminated, defended; and how could it be contested? Step 7: apply <i>the questions to one's own proposals</i>

Selecting and Using an Appropriate Model

No model of argumentation is task-neutral: each was built to answer a particular kind of question, and the most reliable route to selection is to begin from the analytical task rather than the theory. Three questions do most of the work. First, what is the unit of analysis: a single argument, an exchange between parties, an audience-directed text, or a policy's framing of a problem? Second, is the aim description (mapping how an argument works), evaluation (judging its soundness or fairness), or critique (exposing its ideological

work)? Third, at what scale does the claim operate: the micro level of an individual inference, or the macro level of discourse and power?

Where the task is to reconstruct the structure of a claim (a curriculum rationale, a position statement, a student's justification), Toulmin's (1958/2003) model offers the most accessible first pass, distinguishing claim, grounds, warrant, backing, qualifier, and rebuttal. Where the warrant itself is

contested (for example, where the justification for a subject's place in the curriculum is precisely what is at issue), Freeman's (2011) dialectical account models how warrants and backing are themselves argued for. Where the task is to code recurring patterns of reasoning across a corpus (ministerial statements, consultation responses), argumentation schemes (Walton et al., 2008) supply a fine-grained catalogue with attached critical questions, supporting systematic and comparable coding.

Where the object is an exchange rather than a single argument, the procedural models apply. Pragma-dialectics (van Eemeren & Grootendorst, 2004) evaluates whether a multi-party discussion (a committee deliberation, a consultation) proceeds reasonably and where it lapses into fallacy, while Habermas (1984) provides a stronger normative benchmark, asking whether a deliberative process was free of coercion and distortion and therefore whether its consensus is legitimate. Where the object is persuasion, the rhetorical models are the tools of choice: Aristotle (ca. 350 BCE/2007) for the persuasive anatomy of speeches and public justifications; Perelman and Olbrechts-Tyteca (1958/1969) for consensus-building documents such as green

and white papers; and Fisher (1987) where reform is argued through narratives of crisis, decline, or renewal.

Where the claim to be examined is less an argument than a framing (where the question is what a policy takes for granted rather than whether it reasons well), the critical tradition applies. Fairclough (2003) links textual choices to the power relations they sustain; Bacchi (2009) interrogates how a policy constructs the very problem it purports to solve, and what its representation silences. Neither is designed to assess validity or soundness, so they pair naturally with the structural models rather than replacing them.

In practice, the strongest analyses layer approaches with different objects: a Toulmin (1958/2003) reconstruction of a policy's argument can sit inside a WPR analysis of its problematisation (Bacchi, 2009), within a pragma-dialectical account of the consultation that produced it (van Eemeren & Grootendorst, 2004). Table 10's affordances and constraints columns indicate what each model can and cannot see, and Table 11 sets out the sequence of moves each requires; read together, they support a deliberate, task-led selection rather than a default to the most familiar model.

Glossary of Terms

Table 12. Glossary of key terms used across the models of argumentation

Term	Definition	Associated approach(es)
Adherence	The strengthening of an audience's assent to a thesis; the measure of argumentative success in the New Rhetoric.	The New Rhetoric
Backing	The authority, evidence, or body of knowledge that supports a warrant itself.	Toulmin; Freeman
Claim / standpoint	The conclusion or position advanced for acceptance.	Toulmin;Pragma-Dialectics
Critical questions	Standard questions attached to an argumentation scheme that test whether its presumptive inference holds.	Argumentation Schemes
Defeasible reasoning	Reasoning that is provisionally acceptable but open to defeat by new evidence or unanswered critical questions.	Argumentation Schemes
Dialectic	The testing of claims through a structured exchange of challenge and response between parties.	Freeman; Pragma-Dialectics
Discourse	Language in use as social practice, understood as constituting (not merely reflecting) social reality.	CDA; WPR
Ethos, pathos, logos	The three rhetorical appeals: speaker credibility, audience emotion, and reasoned demonstration.	Aristotelian Rhetoric
Fallacy	A violation of a rule for critical discussion that frustrates the reasonable resolution of a difference of opinion.	Pragma-Dialectics
Genealogy	Tracing how a particular representation of a problem has come about over time.	WPR
Grounds (data)	The facts or evidence adduced in direct support of a claim.	Toulmin
Ideal speech situation	Counterfactual conditions of non-coercive, undistorted communication in which only the "unforced force of the better argument" operates.	Habermas
Intertextuality / interdiscursivity	The ways a text draws on other texts, and on other discourses and genres.	CDA
Narrative coherence and fidelity	Twin tests of a story: whether it hangs together, and whether it "rings true" against the audience's values and experience.	Narrative Paradigm
Normative / descriptive	Whether a model prescribes how argumentation ought to proceed, or maps how it actually does.	Cross-cutting distinction
Presence (présence)	The technique of making selected facts and values salient in the audience's mind.	The New Rhetoric
Problematisation	The way a policy constructs, rather than simply responds to, the problem it claims to solve.	WPR
Qualifier	The modal strength attached to a claim (e.g. "presumably", "in most cases").	Toulmin
Rebuttal	The conditions or exceptions under which a claim would not hold.	Toulmin

Term	Definition	Associated approach(es)
Subjectification	The effects by which problem representations produce particular kinds of subjects (e.g. “the failing school”).	WPR
Universal audience	The imagined audience of all reasonable persons to whom sound argumentation should be acceptable.	The New Rhetoric
Validity claims	The four claims implicitly raised by any speech act: comprehensibility, truth, rightness, and sincerity.	Habermas
Warrant	The (often implicit) inferential licence connecting grounds to claim.	Toulmin

By chapter’s end, the reader should appreciate that argumentation and discourse analysis are tools for storytelling and insight. We summarise key takeaways: build arguments that are transparent (show your reasoning), consistent (don’t contradict your data), and grounded (always tie back to evidence). For discourse analysis, we stress remaining critical — language shapes thought, so watch for specious language or gaps. Consider a mini-synthesis example: in our classroom discussion study, data from both transcripts and field notes point to the same conclusion

about student voice. It is worth underscoring that learning to argue well is an iterative process: draft your arguments, get feedback, and refine. This skill will make your research findings compelling and trustworthy. With arguments and discourse analysis covered, the next chapters turn to the nuts-and-bolts of research methods and data handling (Chapters 7 and 8 onward), but always with the golden thread of coherent argumentation in mind. Stated simply: you are now equipped to weave your data and ideas into a persuasive narrative.

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chapter seven

7. Research methods for education, curriculum and policy scholarship

Introduction

In this chapter, we dive into specific research methods — the actual procedures and tools you use to collect data. Think of methods as the instruments in your research toolbox: surveys, interviews, observations, document analysis, and so on. We start with an overview of why method choice matters. For example, to study student attitudes you might choose a survey to reach many students quickly, whereas an in-depth interview might be better for understanding an individual's thought process. By using everyday examples (e.g. polling students before a football game vs interviewing the team captain afterward), we explain the logic behind different tools.

We then introduce several key methods one by one, discussing what they are and how they fit educational contexts. Surveys and Questionnaires: Great for gathering data from large groups. We illustrate with a case where a district-wide survey identifies trends in teacher satisfaction. We highlight best practices (clear questions, pilot testing) and common pitfalls (leading questions, low response rates). Interviews and Focus Groups: These offer depth. An example

scenario: a curriculum researcher might conduct focus groups with students to explore how they felt about a new textbook. We discuss the importance of open-ended questions and active listening, and how to take notes or record safely (with permission). Observations: Watching things happen. Picture a researcher spending several weeks observing science classes to see how often hands-on experiments occur, noting the difference between overt observations (teacher knows researcher is there) and covert (less ideal ethically). Document and Content Analysis: Studying existing texts (e.g. policy documents, student essays). For instance, a study might compare school mission statements pre- and post-policy change to see shifts in language. We describe how to extract data from text systematically (coding themes, tallying word frequencies).

Throughout, practical tips abound. For example, to illustrate survey design, we might sketch a poor multiple-choice question and show how to improve it. We treat each method as a series of choices: if you pick interviews, you must decide whom to interview, how long each session will be, and how

to transcribe the conversations. Table 13 lists these methods side by side, with columns like “Best For” (e.g. “Understanding personal experiences”), “Strengths” and

“Limitations”. The chapter explains how to read this table: for instance, noting that while surveys can reach many people easily, they generally don’t allow for follow-up clarification.

Table 13. *Common research methods and instruments in education, curriculum and policy scholarship*¹³

Method	What it captures	Approach & instruments	Affordances	Constraints & cautions	Key sources
Interviews Qualitative — self-report	First-person verbal accounts: meanings, experiences, reasoning and reported practice, captured as transcribed talk.	Structured, semi-structured or unstructured; individual, in person or online; interview guide; audio-recorded and transcribed.	Access to teachers’ and learners’ reasoning, values and lived experience behind practice; flexible probing; rich for pedagogy, identity and curriculum enactment; pairs well with observation and artefacts.	Self-report is not behaviour; social-desirability and recall bias; interviewer effects; transcription and analysis labour; small samples limit breadth.	Brinkmann & Kvale (2015); Kvale (2007).
Focus groups Qualitative — self-report (group)	Interactive group talk: shared and contested views, norms and collective sense-making.	Facilitated small-group discussion (typically 6–8); topic guide and stimulus materials; recorded and transcribed; attention to group dynamics.	Surfaces the range and negotiation of views efficiently (assessment values, curriculum reform); good for co-design and consultation; participant interaction itself generates data.	Dominant voices and conformity; unsuited to sensitive or individual topics; harder to analyse; facilitator-dependent; no individual-level generalisation.	Krueger & Casey (2015); Barbour (2018).
Questionnaires & scales Quantitative/mixed — self-report	Structured self-report: closed and open responses; attitudes, frequencies and	Online or paper questionnaires; validated Likert scales and psychometric	Efficient breadth across large samples; standardised, comparable and repeatable; supports benchmarking, trend	Construct and measurement validity and reliability demands; response and non-response bias; limited	Oppenheim (1992); DeVellis (2017).

¹³ Data types cut across several dimensions at once: primary vs secondary; qualitative vs quantitative; self-report vs observed vs elicited vs trace; and naturally occurring vs researcher generated. The same technique can yield different data (an interview transcribed as talk or coded into counts). Choice of data should follow the research question, and triangulating complementary data types (pairing what people: say – interviews; do – observation; and make – artefacts) strengthens claims. Ethics, consent and data governance cut across every row and are heightened when working with minors, images and administrative or trace data

	ratings, often numeric.	instruments; piloting; defined sampling frame.	monitoring and scale-based constructs (self-efficacy, engagement).	depth, question-wording effects.	
Observation Qual or quant — observed	Records of behaviour and interaction in situ — what people do, not only what they say; field notes, schedules, counts.	Participant or non-participant; structured schedules and tallies or naturalistic notes; live or video-recorded; time- and event-sampling.	Captures enacted pedagogy, workshop practice and the hidden curriculum directly; strong ecological validity; complements self-report; central to practice-based study.	Observer effect and reactivity; positionality and inference; labour-intensive; ethics of watching; fixed schedules may miss the unanticipated.	Angrasino (2007); Spradley (1980).
Documents & policy texts Qualitative — naturally occurring	Existing textual and archival material: policy, curriculum specifications, schemes of work, minutes, media.	Document sourcing and provenance checks; content, thematic or critical analysis; attention to authorship, audience and context.	Unobtrusive and cost-effective; essential to curriculum and policy scholarship; traces change over time; corroborates other data.	Produced for other purposes (selectivity, silences); access and authenticity; meaning is not self-evident; risk of reading intention into text.	Prior (2003); Bowen (2009).
Visual & multimodal data Qualitative — observed/produced	Images, video, drawings, diagrams and multimodal artefacts — the visual and material dimension of learning.	Researcher- or participant-generated photos and video; photo-elicitation; screen and workshop capture; multimodal / social-semiotic analysis.	Captures making, gesture, and spatial and material practice that text misses; participatory and engaging; powerful for design and technology processes and for inclusion.	Consent, anonymity and safeguarding (especially minors); interpretive and time-heavy; ethics and storage of images; dilemmas of representation.	Rose (2016); Kress (2010); Banks (2018).
Diaries, journals & logs Qual or quant — self-report over time	Self-recorded entries over time: experiences, decisions, activity and reflection captured in situ.	Solicited paper or digital diaries, audio/video logs, experience sampling; structured or free form; prompts and schedules.	Captures process and change close to the moment; reduces retrospective bias; good for professional learning, design decisions and workload.	Participant burden and attrition; variable completion and candour; reactivity; analysis of uneven, idiosyncratic data.	Alaszewski (2006); Bolger et al. (2003).
Tests, assessments & attainment data	Performance and outcome data: test scores, grades,	Standardised or bespoke tests, rubrics and marking; attainment and progress datasets;	Central to assessment and effectiveness research; enables measurement of learning.	Validity, reliability and fairness threats; construct under-representation;	AERA et al. (2014); Newton & Shaw (2014); Black & William (1998).

Quantitative — measured	rubric judgements and portfolio marks.	attention to validity, reliability and comparability.	comparison and value-added; feeds evaluation and accountability.	teaching-to-the-test; scores decontextualised from learning.
Secondary & administrative data / learning analytics	Pre-existing datasets and digital traces: national statistics, MIS records, VLE/log and clickstream data.	Access via repositories, national datasets and platform logs; linkage and cleaning; analytics and data-mining; governance and consent for reuse.	Large-scale, low-cost, longitudinal reach (uptake, cohorts, engagement); enables trend and equity analysis; timely learning-analytics feedback.	Smith (2008); Siemens & Long (2011).
Quantitative — existing/trace				
Elicitation & projective techniques	Responses to structured stimuli: Q sorts, card sorts, concept maps, vignettes and ranking tasks.	Purpose-built stimuli (statements, cards, scenarios); participants sort, rank, map or respond; combined with think-aloud or interview.	Externalises tacit views and constructs — makes the invisible visible; strong for values, subjectivity and conceptual understanding (e.g. Q sorts on curriculum); engaging and accessible.	Barton (2015); Finch (1987); Watts & Stenner (2012); Novak & Gowin (1984).
Mixed — elicited				
Verbal protocols & process data	Real-time records of thinking and doing: think-aloud transcripts, design moves, linkographs and process traces.	Concurrent or retrospective think-aloud; screen/video capture of activity; protocol analysis and linkography; segmentation and coding of moves.	Windows onto design cognition and problem-solving as it unfolds; captures process, not just product; powerful for design and technology education and expertise research.	Ericsson & Simon (1993); Goldschmidt (2014).
Qual/quant — observed process				
Artefacts, portfolios & practice data	Made objects and their traces: prototypes, design portfolios, sketchbooks, models and digital files.	Collection and documentation of artefacts and portfolios; photographing or scanning; rubric or interpretive analysis; usually paired with interview or observation.	Direct evidence of designing, making and capability; central to design and technology assessment and curriculum research; captures material knowing that words cannot.	Kimbell & Stables (2007); Ingold (2013).
Qualitative — produced/material				

The methods you choose influence every part of your study. In concluding the chapter, we recap the selection process as a sequence: match each research question with a method that can answer it. If your question is “How does teacher collaboration affect curriculum design?”, you might choose interviews with the teachers themselves, because their experiences are central. Revisiting our earlier examples, each method yielded useful data: e.g. the surveys identified a general trend of course preference, which was then explained by insights from follow-up interviews. We also encourage flexibility; sometimes a small pilot reveals a

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method isn't working (maybe a survey question is misunderstood), and it's okay to tweak your approach. Finally, we emphasise that no method is inherently superior — the best choice is the one that fits your question, context, and resources. With methods clarified, the next chapters detail what comes after data collection: how to analyse that data, first focusing on qualitative analysis (Chapter 8) and then on quantitative techniques for smaller samples (Chapter 9). But here, think of Chapter 7 as arming you with the right tools; now it's time to learn how to use them effectively on your data.

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chapter eight

8. Qualitative data analysis for education, curriculum and policy scholarship

Introduction

Qualitative analysis is the disciplined process of moving from a mass of textual, verbal or visual data to warranted interpretation — typically by familiarising, coding, categorising and theorising, and writing throughout.

Approaches differ in what they treat as the object of analysis (patterns of meaning, categories, theory, lived experience, language, stories or talk), in how far they are steered by prior theory (inductive, deductive or abductive), and in their underlying paradigm. Method should follow the research question and its paradigm, not fashion or software. The approaches below are the main traditions; the techniques that follow are a shared toolkit drawn on across them. In practice, studies often blend approaches (for example thematic coding with framework charting) provided the analytic logic stays coherent.

Once qualitative data (like interview transcripts, observation notes, or open-ended survey responses) has been collected, the next step is making sense of it. Chapter 8 is dedicated to qualitative data analysis. Unlike applying a statistical formula, qualitative analysis is more like detective work: you look for

patterns, themes, and meanings in the words and actions you recorded. Be reassured: the process, while systematic, is also creative and iterative. For example, a researcher might start with a broad question like “What motivates students in after-school programmes?” After reading through focus group transcripts, the researcher notices recurring topics: peer influence, parent expectations, and fun activities. Identifying these themes is the essence of qualitative analysis.

We explain common strategies such as coding (marking pieces of data with labels), thematic analysis (finding and grouping main ideas), and framework analysis (using a predefined structure to organise data). Each method is illustrated with examples. Say we have interview excerpts from two teachers about classroom management. Imagine tagging each sentence with labels (codes) like “student respect” or “punishment strategies”. The next step is turning those codes into a table or mind map that highlights that both teachers frequently mention “consistency” as key. We also address practical tools: technology (like qualitative analysis

software) vs analogue (colourful sticky notes on a board), noting pros and cons of each in an accessible way.

A special focus is given to trustworthiness (the qualitative equivalent of validity). Key techniques include member checking (sharing findings with participants to see if they agree) and triangulation (using multiple data sources). For instance, a case example might show a researcher comparing student interview themes with actual student test scores or parent feedback to see if all sources tell a

consistent story. These examples clarify how to avoid being led astray by one perspective. The chapter encourages reflexivity, too, reflecting on the analyst's role. For example, if analysing classroom observations, one must note personal biases (perhaps the observer subconsciously favours more talkative students). Tables 14 and 15 outline the analytic traditions and cross-cutting techniques (inductive vs deductive coding). The text around them elaborates on what each accomplishes and why it's done in a specific order.

Table 14. *Analytic approaches: the main traditions*¹⁴

Approach	What it does (analytic logic)	Best suited to	Key procedures	Key sources
Thematic analysis reflexive TA; flexible	Identifies, analyses and reports patterns (themes) of meaning across a dataset. Can be inductive or deductive, semantic or latent. Reflexive TA treats themes as actively generated by the researcher, not “emerging”.	A very wide range — interview and focus-group data, open survey responses, curriculum or policy documents. A strong default for perceptions and pedagogy when no other approach is mandated.	Familiarisation → coding → generating initial themes → reviewing and developing themes → defining and naming → writing up (the six phases).	Braun & Clarke (2006, 2022).
Qualitative content analysis	Systematic categorisation of the content of texts into a coding frame, ranging from manifest	Larger document sets, curriculum specifications, policy texts and open survey	Define the unit of analysis → build a coding frame (inductively or deductively) → pilot and refine →	Krippendorff (2019); Schreier (2012); Hsieh & Shannon (2005).

¹⁴ Whatever the approach, quality rests on trustworthiness rather than statistical validity (credibility, transferability, dependability and confirmability; Lincoln & Guba, 1985) pursued through an audit trail, reflexivity, thick description, triangulation, negative-case analysis and, where appropriate, member checking. Two practical reminders: analysis is iterative and recursive, not linear; and CAQDAS and, increasingly, AI/LLM tools can organise and even suggest codes but cannot do the interpretation — and using them with participant data raises the data-protection duties set out in the ethics chapter. Related variants worth knowing include template analysis (a flexible, a-priori-template form of thematic analysis; King, 2012) and abductive analysis (theory-informed grounded work; Tavory & Timmermans, 2014).

systematic categorisation	(surface, countable) to latent (interpretive) content. Conventional, directed or summative variants (Hsieh & Shannon).	data where systematic, replicable categorisation – and sometimes frequency counts – are wanted.	code systematically → check consistency → interpret categories.	
Framework analysis matrix-based; applied/policy	A matrix-based approach developed for applied policy research: data are summarised into a thematic framework and charted in a case-by-theme matrix, enabling within- and cross-case analysis. Transparent and team friendly.	Applied, policy and evaluation research with clear questions and timelines; team-based analysis; when an audit trail and cross-case comparison matter.	Familiarisation → identify a thematic framework → index/code the data → chart into a matrix (cases × themes) → map and interpret.	Ritchie & Spencer (1994); Gale et al. (2013).
Grounded theory analysis theory-building	Builds theory from data through iterative coding and constant comparison — initial → focused → theoretical coding — with theoretical sampling and saturation. The constructivist variant foregrounds co-construction.	Areas with little existing theory — emerging pedagogies, processes, learner or teacher experience — where the aim is an explanatory model, not description.	Line-by-line initial coding → constant comparison → focused coding → categorising → memoing → theoretical sampling → integrate into a theory.	Charmaz (2014); Corbin & Strauss (2015).
Interpretative phenomenological analysis IPA; idiographic	Idiographic, detailed examination of how particular people make sense of significant lived experience, through a double hermeneutic (the researcher interpreting participants interpreting). Case-by-case, then cross-case.	Small, homogeneous samples and experiential questions — how pupils experience assessment, making, inclusion or transition.	Read and re-read a case → exploratory noting → develop experiential statements → cluster into personal themes → repeat per case → identify group experiential themes.	Smith, Flowers & Larkin (2009).
Discourse analysis CDA / FDA / WPR	Analyses language-in-use and how texts construct meaning, subjects, knowledge and power. Critical discourse analysis links text to social practice; Foucauldian DA and Bacchi's WPR interrogate how policy	Policy scholarship, curriculum framing, and media or institutional texts; questions about power, framing, legitimisation and subjectivity.	Select texts → close reading → analyse lexical, rhetorical and argumentative features → link to discourses, interests and effects → (WPR) ask what the problem is represented to be.	Fairclough (2003); Bacchi (2009); Gee (2014).

problematises. Not about themes but about what language does.				
Narrative analysis stories as the unit	Treats stories as the unit of analysis, examining the content, structure and/or performance of narratives and how people construct meaning and identity over time (thematic, structural and dialogic/performative forms).	Teacher identity and professional-learning trajectories, career and biographical studies, and experience across time.	Identify narrative segments → choose an analytic focus (thematic / structural / dialogic) → analyse story form and function → interpret in context → often restory.	Riessman (2008); Clandinin & Connelly (2000).
Conversation analysis talk-in-interaction	Fine-grained analysis of the sequential organisation of naturally occurring talk — turn-taking, repair, adjacency pairs — using detailed (Jefferson) transcription, to show how social action is accomplished in talk.	Classroom interaction and pedagogy, teacher–pupil talk, questioning, feedback and assessment dialogue; naturally occurring recorded data.	Record naturally occurring talk → transcribe in fine detail → identify sequences and practices → analyse turn-by-turn → build collections of comparable cases.	Sacks (1992); Sidnell & Stivers (2013).

Table 15. Cross-cutting techniques: the shared toolkit

Technique	What it is	Role / when to use it
Coding (first- & second-cycle)	Attaching short labels to segments of data to condense and index meaning. First-cycle codes stay close to the data (descriptive, in vivo, process, values); second-cycle / pattern coding groups these into categories and themes.	The basic analytic move underpinning almost every approach; how raw data becomes retrievable and comparable.
Memoing	Writing running analytic notes that capture emerging ideas, hunches, definitions and decisions as they occur.	Turns coding into thinking; develops concepts toward theory and builds the audit trail that supports dependability.
Constant comparison	Continuously comparing data with data, and data with codes and categories, to test and refine them.	Core to grounded theory but widely borrowed; keeps categories grounded in the data and internally consistent.
Categorising & abstraction	Grouping codes into categories and moving up levels of abstraction, from description toward concepts and themes.	The move from “what is here” to “what it means” — where coding becomes interpretation.
Data display & matrices	Condensing coded data into matrices, networks and charts (e.g. case × theme) to enable comparison.	Makes cross-case patterns visible and disciplines interpretation; central to framework analysis and to Miles, Huberman & Saldaña’s sourcebook.

Negative / deviant case analysis	Actively seeking and examining cases that do not fit the emerging interpretation.	A rigour check that guards against confirmation bias and sharpens or qualifies claims.
Retroduction / abduction	Moving iteratively between data and theory to infer the best explanation or an underlying mechanism.	The reasoning behind interpretive and realist analysis; how surprising data generates new theoretical insight.
Reflexivity & positionality	Systematically examining how the researcher's assumptions, role and relationships shape the analysis.	A rigour technique, not merely a stance — it makes interpretation transparent and accountable.
CAQDAS	Software (NVivo, ATLAS.ti, MAXQDA, Dedoose) to store, code, query and visualise qualitative data.	Manages large or team datasets and supports transparency — but organises rather than interprets; the analyst still does the thinking.
Triangulation & member checking	Cross-checking across data sources, methods or analysts, and returning interpretations to participants.	Trustworthiness techniques that strengthen credibility — used judiciously, not as a tick-box.

In wrapping up Chapter 8, we stress that qualitative analysis bridges data to insights. It's where raw observations and stories become structured findings. To summarise with a full example given the focus group on student motivation, suppose our themes ended up as "sense of belonging", "extracurricular passion" and "academic pressure". We show how those themes were grounded in actual quotes and references to our earlier codes. The conclusion reassures readers that while qualitative analysis can feel open-ended,

following a clear process (with coding and constant comparison) leads to trustworthy results. Furthermore, we remind readers that analysis doesn't have to be perfect or final the first time; revisiting data and themes is normal. Finally, we highlight that once qualitative findings are solid, the next chapters will show how to complement them with numerical insight. But even if your study is purely qualitative, Chapter 8 leaves you ready to report rich, nuanced results that reflect real human experiences in education.

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chapter nine

9. Quantitative data analysis for smaller samples in education, curriculum and policy scholarship

Introduction

Quantitative analysis in education often works with small, non-random samples: a class, a cohort, a handful of schools. This has three consequences that shape everything below: statistical power is limited (real effects are easily missed, and a non-significant result is not evidence of no effect); parametric assumptions are fragile and hard to check; and description, effect sizes and confidence intervals matter more than p-values. Two distinctions organise the field. First, descriptive statistics summarise the sample in hand, whereas inferential statistics generalise to a population or test hypotheses. Second, a variable's level of measurement (nominal, ordinal, interval or ratio) determines which techniques are legitimate. With small samples, prefer exact and non-parametric methods when assumptions fail, always report effect sizes with confidence intervals, and treat p-values with caution.

This chapter addresses quantitative data analysis, especially in situations where sample sizes are modest (common in education settings). Quantitative analysis often evokes images of large datasets and p-values, but small-scale

educational research requires a tailored approach. We begin by framing expectations: with a small number of cases (say, a single classroom or a few schools), we can still compute useful statistics and identify patterns, though we must be cautious about making sweeping generalisations.

Using an accessible example, imagine a teacher who has test scores for 15 students before and after a new teaching method. The question might be, "Did scores improve significantly on average?" We walk through the use of basic descriptive statistics (mean, median, range) to summarise these scores. For instance, the teacher finds that the average score rose from 70 to 78 after the method change. We explain how to interpret that carefully: a rise of 8 points sounds good, but with only 15 students, we would consider the variability — perhaps some students did much better and others not at all.

Next, we introduce inferential techniques suitable for small samples, like paired t-tests or non-parametric tests (e.g. Wilcoxon signed-rank) for before-and-after comparisons.

However, the tone emphasises understanding over formulae. For example, rather than just listing the maths of a t-test, we might say: “One common approach is the t-test, which assesses whether the observed difference (8 points) could easily happen by chance. If it’s unlikely (which we quantify with a p-value), we say the improvement is significant. In small classes, though, a single outlier can sway results. Suppose one student scored 50 out of 100 initially — that outlier will drag the average down before the intervention, potentially exaggerating the measured effect.”

We illustrate with simple graphs and tables. Picture a bar graph of pre- and post-test scores for each student, alongside a table of summary statistics. The text explains how to read them: the bar chart highlights who improved (maybe most did, but one student’s score dropped). We discuss the storytelling aspect of numbers: statistics are not just numbers; they reflect student stories. Perhaps the one student who did worse had an unrelated illness. The commentary around quantitative tables in the text would note

such context: “Table 9.1 shows the class’s pre- and post-test averages and standard deviations. Notice the small sample size (n=15); the wider standard deviation indicates scores vary. This table’s commentary would point out that while the average increased, the data also show that one student’s score dropped by 10 points, reminding us to question if anything unusual happened for that student.”

Throughout the chapter, we emphasise visual literacy (using charts, histograms, box plots to see distributions) and informally describe statistical concepts. We explain confidence intervals in plain terms (“This range of scores would occur in about 95 out of 100 repeated tests.”), and caution about over-interpretation. Non-technical examples prevail comparing two small classes’ average satisfaction ratings, checking correlation between study time and grades in a small group, etc. If one of these results turns out not significant, the explanation will highlight that “nonsignificant” doesn’t mean “no effect”; it often means “we can’t be sure with so few data points.”

Table 16. Descriptive statistics: summarising the sample

Technique	Data needed	What it tells us / can do	What it cannot do	How to do it
Levels of measurement	Any variable — the aim is to classify it.	Classifies data as nominal (categories: subject, gender), ordinal (ranked: Likert, grades) or interval/ratio (continuous: scores, time). Determines which statistics are legitimate.	It is a classification, not an analysis. Mislabelling — e.g. treating a single ordinal Likert item as interval — invalidates later tests.	Classify every variable before analysing. Decide whether Likert items are treated as ordinal (safer, especially single items) or interval (common for summed scales) and justify the choice.

Frequencies, proportions & cross-tabulation	Nominal or ordinal (categorical) data: continuous data can be banded.	How many and what proportion fall in each category; a crosstab shows the joint distribution of two categorical variables (e.g. uptake by gender). The basis for chi-square.	Show the magnitude of differences on a continuous scale, or causation. With small n, percentages are unstable and can mislead.	Count categories; report n and %. For two variables build a contingency table (rows x columns) and report cell counts, not just percentages, when n is small.
Central tendency mean, median, mode	Mode — any level; median — ordinal or above; mean — interval/ratio.	The typical or central value. The mean uses all data; the median is robust to outliers and skew; the mode shows the most common value.	Represent a skewed or bimodal distribution well (the mean misleads); a single value hides spread; a mean of ordinal data can mislead.	Choose by level of measurement and distribution: report the median (with IQR) for skewed or ordinal data, the mean (with SD) for reasonably symmetric interval/ratio data.
Dispersion range, IQR, SD, variance	Range/IQR — ordinal or above; SD/variance — interval/ratio.	How spread out the data are: range (min–max), interquartile range (middle 50%, robust), standard deviation (average distance from the mean). Essential context for any average.	Convey distribution shape on its own; SD is distorted by outliers and skew, so pair it with the mean only when the mean is appropriate.	Report a measure of spread with every average — IQR with the median, SD with the mean. With small n, note that the SD is estimated imprecisely.
Distribution shape & normality checks	Interval/ratio (continuous) data.	Whether data are roughly symmetric or normal — via histograms, Q-Q plots, skewness/kurtosis and Shapiro–Wilk. Guides whether parametric tests are defensible.	Give a definitive verdict at small n: normality tests are underpowered and often miss non-normality. Normality is assumed of the population/residuals, not required of the raw sample.	Inspect a histogram and Q-Q plot; use Shapiro–Wilk as a guide, not a gate. If in doubt with small n, prefer non-parametric methods.
Data visualisation	Any — matched to type: bar (categorical), histogram/boxplot (continuous), scatter (two continuous), line (trend).	Reveals patterns, spread, outliers and relationships that summary numbers hide. Often the most honest way to present a small sample.	Substitute for inferential testing; poor scales or chart choices mislead, and with small n an apparent pattern may be noise.	Match the chart to the data type; for small samples show individual data points (dot/strip plots, jittered scatter) rather than only bars or means.

Table 17. Inferential statistics for smaller samples: testing and estimating¹⁵

Technique	Data needed	What it tells us / can do	What it cannot do	How to do it
Effect sizes & confidence intervals report always	Depends on the comparison: group means (Cohen's d / Hedges' g), association (r), categorical (odds ratio, Cramér's V).	The magnitude and practical importance of an effect, independent of sample size; the CI shows its precision and plausible range. For small samples, more informative than a p-value.	Confirm significance or causation. Effect sizes from tiny samples are themselves imprecise (wide CIs) and can be inflated.	Report an effect size and its 95% CI alongside every test; interpret the CI width, not just the point estimate; use Hedges' g (small-sample-corrected d) when n is small.
Chi-square & Fisher's exact test	Two categorical variables as frequency counts in a contingency table (not percentages).	Whether two categorical variables are associated more than chance (e.g. subject uptake x gender). Fisher's exact test gives an exact p for small or sparse tables.	Show the strength or direction of association (use phi / Cramér's V), or causation. Chi-square is invalid when expected cell counts are low (< 5).	Build the table; check expected counts — if any < 5 (common at small n) use Fisher's exact test; report an effect size (phi or Cramér's V).
Independent groups: t-test / Mann-Whitney U	One continuous or ordinal outcome and one binary grouping variable; two independent groups.	Whether two independent groups differ. The t-test compares means (assumes approximate normality); Mann-Whitney U compares ranks and is the small-sample, non-normal or ordinal alternative.	Establish causation unless randomised; detect real differences reliably when underpowered. The t-test is fragile with small, skewed samples.	Check distribution and group sizes; use Welch's t-test for means (robust to unequal variances) or Mann-Whitney U for ranks; report an effect size (d, or rank-biserial r).
Paired / repeated: paired t-test / Wilcoxon signed-rank	Two related continuous or ordinal measures on the same participants (e.g. pre- and post-)	Whether a paired change exceeds chance. The paired t-test works on the differences (assumes they are ~normal); Wilcoxon signed-rank is the	Attribute change to a cause without a control or comparison group (maturation, testing effects); overcome low power at small n.	Compute each participant's difference; check the differences' distribution; use the paired t-test or Wilcoxon signed-rank accordingly; report an effect size.

¹⁵ For small samples the priority order is: describe the data honestly (ideally showing individual data points), report effect sizes with confidence intervals, and interpret p-values cautiously. Underpowered studies risk not only missing real effects (Type II error) but also overestimating the effects they do detect. Correct for multiple comparisons and remember that statistical significance is not practical importance. Conventional factor analysis and structural equation modelling require large samples and are usually inappropriate here — a notable exception is Q methodology, which factor-analyses persons rather than variables and is designed for small participant sets (Watts & Stenner, 2012). Bayesian estimation offers an alternative framework that does not rely on large sample approximations. Accessible tools include JASP and Jamovi (both free, with effect sizes and Bayesian options built in) alongside SPSS and R.

Technique	Data needed	What it tells us / can do	What it cannot do	How to do it
Three+ groups: ANOVA / Kruskal-Wallis	test); paired observations.	non-parametric alternative for small, skewed or ordinal data.		
RM-ANOVA / Friedman if related	One continuous/ordinal outcome and one categorical factor with 3+ levels; independent or (repeated) related measures.	Whether three or more groups or conditions differ overall. ANOVA compares means; Kruskal-Wallis (independent) and Friedman (related) are the rank-based alternatives for small, non-normal or ordinal data.	Tell you which groups differ (a significant result needs post-hoc tests); establish causation. Small per-group n badly reduces power.	Check assumptions and group sizes; run ANOVA or its non-parametric equivalent; if significant, run corrected post-hoc comparisons (e.g. Tukey; Dunn's for Kruskal-Wallis); report eta-squared / epsilon-squared.
Correlation: Pearson r / Spearman's rho	Two continuous variables (Pearson) or two ordinal / non-normal variables (Spearman); paired per case.	The strength and direction of a linear (Pearson) or monotonic (Spearman) association between two variables (e.g. coursework vs exam mark). r ranges from -1 to +1.	Establish causation; capture non-linear relationships (Pearson). At small n, r is unstable with a wide CI and (Pearson) is sensitive to outliers.	Plot a scatterplot first; choose Pearson (linear, continuous, normal) or Spearman (ordinal / non-normal / monotonic); report r, its CI and p; never infer cause.
Regression: simple & multiple	One continuous outcome; one (simple) or more (multiple) predictors, continuous or coded categorical. Needs adequate n per predictor.	How well predictors explain or predict the outcome, the size and direction of each predictor's unique contribution (coefficients), and variance explained (R^2); can adjust for covariates.	Prove causation from observational data; give trustworthy estimates when overfit — it is data-hungry (~10-15 cases per predictor), so small samples support very few predictors.	Keep predictors few at small n; check linearity, residual normality, homoscedasticity, multicollinearity and influential cases; report coefficients with CIs and adjusted R^2 .
Reliability & agreement: Cronbach's alpha / Cohen's kappa	Alpha — multiple items measuring one construct (a scale). Kappa — two raters' categorical judgements of the same items.	Internal consistency of a scale (alpha) or inter-rater agreement beyond chance (kappa) — central to questionnaire and marking-reliability work in assessment research.	Alpha does not prove unidimensionality or validity, only consistency, and rises with item count; kappa is distorted by skewed category prevalence. Small n makes both imprecise.	Alpha — compute across a scale's items (aim $\geq .70$, interpret in context). Kappa — cross-tabulate two raters' codes; use weighted kappa for ordinal grades; report with CIs.

In concluding Chapter 9, we reinforce that quantitative analysis can be valuable even with small samples, as long as we are clear about its limits. Two summarising lessons: first, always pair numbers with narrative — a statistic is more

informative when explained in the context of the classroom. Second, use simple visuals and statistics to illuminate patterns, but accompany them with thoughtful caveats (for instance, being upfront about sample size limits). To end, revisit our initial example and imagine the teacher's decision: if the improvement was statistically significant, they might feel confident to keep the new method; if not, they'd look closer or try a tweak. Consider, too, a hybrid approach to analysis: alongside the class test scores, the teacher could

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note qualitative feedback (students said they enjoyed the method), blending insight from Chapters 8 and 9. With this, you are ready to handle the number-crunching in your own project. Next, in Chapter 10, we step back again to big-picture research approaches, seeing how these methods and analyses fit within broader study designs. But remember, even small numbers can speak loudly when analysed thoughtfully.

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chapter ten

10. Research approaches for education, curriculum and policy scholarship

Introduction

While specific methods (surveys, interviews, etc.) are the nuts and bolts of collecting data, research approaches define the overall design or strategy of a study. Chapter 10 surveys various approaches that education researchers commonly use, such as case studies, ethnographies, experiments, longitudinal studies, and design-based research. We start by explaining that an approach ties together methods, context, and questions in a coherent plan. A useful analogy: if methods are individual instruments, a research approach is the orchestra that coordinates them into a symphony. For example, a case study approach focuses on an in-depth investigation of a single case (like one school or classroom), often using multiple methods (observations, interviews, document review). We could illustrate this by detailing a study of one high school's turnaround story after new leadership took charge, showing how a case study approach would collect diverse data from that one setting.

We then contrast this with other approaches. An ethnography, for instance, involves immersion into a setting over time; like a researcher attending a class or school over

months, writing thick descriptions of culture and interactions. An example might describe a researcher who sits in on a primary school for a semester, building trust and slowly uncovering subtle norms (such as how recess is managed). A quasi-experiment (common in policy research) might involve comparing two similar groups where the researcher doesn't have full control (e.g. one school implements a new maths curriculum, another doesn't, and we compare outcomes). We would illustrate this with a simple side-by-side scenario, noting the limitations (there may be differences between schools beyond the curriculum). Other approaches covered might include action research (ties back to chapter 2), survey research designs, chronological or cohort studies (tracking a group over time), and design-based research (iteratively designing an educational tool or programme while studying it). For each, brief examples show how the approach shapes the study.

Table 18 categorises these approaches, listing for each: when to use it, typical data sources, and pros/cons. The text would help interpret the table: for example, case studies provide

deep insight but limit generalisability; ethnographies yield rich context but require long time commitments. We position these approaches not as one right choice but as different lenses. To tie choices back to earlier chapters, we might note how your defined problem and practical constraints suggest

suitable approaches. If the problem is very contextual (“How do refugees experience learning in our school?”), a case study or ethnography could fit. If it’s about measuring effect sizes, an experimental or quasi-experimental design might be better.

Table 18. *Common research approaches in education curriculum and policy scholarship*¹⁶

Methodology & family	Aim & logic of inquiry	Design, data & analysis	Affordances	Constraints & critiques	Key sources
Experimental & quasi-experimental Quantitative	Establish causal effects of an intervention by manipulating variables and comparing groups; deductive and hypothesis-testing. Aligns with (post)positivism.	RCTs, quasi-experiments, pre/post and factorial designs; control or comparison groups with randomisation or matching; effect sizes and inferential statistics.	Strongest warrant for whether a pedagogy or intervention works; underpins effectiveness trials and evidence-based assessment reform; comparable and cumulative; supports scaling decisions.	Classrooms resist control (ethics, contamination, attrition); brackets context, meaning and mechanism; external validity often weak; narrows “what works” to what is trialable.	Campbell & Stanley (1963); Shadish et al. (2002).
Survey research Quantitative — descriptive/correlational	Describe distributions and test associations across populations via standardised self-report; generalise from sample to population. Post-positivist.	Cross-sectional or longitudinal questionnaires; sampling frames; validated scales and psychometrics; correlation, regression and structural equation modelling.	Efficient reach across teachers, learners and institutions; maps attitudes, provision and trends (uptake, workload, assessment perceptions); benchmarking and policy monitoring.	Self-report and non-response bias; correlation is not causation; construct and measurement validity; shallow on process and meaning.	de Vaus (2013); Fowler (2014).

¹⁶ Methodology (the overall strategy and logic of inquiry) sits between paradigm and methods: the same method (an interview, say) serves different methodologies in different ways. Designs are not paradigm-bound; case study, mixed methods and design-based research in particular can be operationalised across several stances. Selection should follow the research question and its purposes and be justified rather than defaulted to. Other designs worth considering include documentary/historical, comparative, longitudinal-cohort and evaluation research.

Methodology & family	Aim & logic of inquiry	Design, data & analysis	Affordances	Constraints & critiques	Key sources
Case study Qualitative or mixed	Intensive, holistic study of a bounded system (school, department, classroom, policy) in real-world context; analytic rather than statistical generalisation. Interpretivist/realist.	Single or multiple cases; multiple data sources (interviews, observation, documents); within- and cross-case analysis guided by theoretical propositions.	Captures the complexity and context of curriculum enactment and pedagogy; strong for how/why questions; accessible to practitioners; supports theory-building and transferable insight.	Contested generalisability; boundary definition and case selection; risk of rich description without theory; researcher influence; data volume.	Yin (2018); Stake (1995); Merriam (1998).
Ethnography Qualitative	Understand a culture or setting from participants' perspectives through sustained immersion; thick description. Interpretivist (also critical).	Prolonged fieldwork, participant observation, field notes, informal interviews and artefacts; reflexive, emergent analysis.	Reveals tacit norms, the hidden curriculum and lived classroom or workshop culture; high ecological validity; surfaces what surveys miss.	Time-intensive; access and positionality; ethics of immersion; limited scope and comparability; dilemmas of representation.	Hammersley & Atkinson (2019); Geertz (1973).
Grounded theory Qualitative	Generate theory grounded in data through systematic, iterative coding rather than testing prior hypotheses. Interpretivist/pragmatist (constructivist variant).	Theoretical sampling, constant comparison, open/axial/selective (or initial/focused) coding, memoing, to saturation.	Builds mid-range theory where little exists (emerging pedagogies, learner experience); rigorous, transparent analytic trail; strong for process.	Demanding and time-consuming; tension between induction and existing theory; version disputes (Glaserian / Straussian / constructivist); "saturation" contested.	Glaser & Strauss (1967); Charmaz (2014); Corbin & Strauss (2015).
Phenomenology (incl. IPA) Qualitative	Describe or interpret the essence and meaning of the lived experience of a phenomenon. Interpretivist.	Small purposive samples; in-depth interviews; bracketing (descriptive) or the double hermeneutic (IPA); thematic essence analysis.	Deep insight into how learners and teachers experience a phenomenon (assessment anxiety, making, inclusion); centres voice and meaning; complements measurement.	Small samples limit breadth; demands interpretive skill and reflexivity; descriptive vs interpretive tension; hard to convey to policy audiences.	Moustakas (1994); van Manen (1990); Smith et al. (2009).
Narrative inquiry Qualitative	Study experience as storied; analyse how people make meaning	Life-history and biographical interviews, journals and artefacts;	Powerful for teacher identity, professional learning and career	Limited generalisation; co-construction and researcher shaping;	Clandinin & Connelly (2000);

Methodology & family	Aim & logic of inquiry	Design, data & analysis	Affordances	Constraints & critiques	Key sources
	through narrative across time and place. Interpretivist.	thematic, structural or dialogic/performance analysis; restorying.	trajectories; honours temporality and voice; engaging and dissemination friendly.	ethics of representation; slides into anecdote if under-theorised.	Riessman (2008).
Action research / PAR Qualitative or mixed – practitioner	Improve practice through cyclical plan-act-observe-reflect, with practitioners as co-inquirers; knowledge for and in action. Critical/pragmatist.	Iterative cycles; mixed local data (observation, pupil work, short surveys); collaborative analysis; validation through changed practice.	Directly improves pedagogy and assessment in situ; empowering and rich for CPD; closes the research-practice gap; strong for teacher-led curriculum development.	Local and hard to generalise; insider bias and validity concerns; workload on practitioners; power dynamics within “participation”.	Kemmis & McTaggart (2005); Reason & Bradbury (2008); McNiff (2013).
Design-based research Mixed – interventionist	Develop and refine educational interventions and theory simultaneously through iterative design cycles in authentic settings. Pragmatist.	Successive design-enact-analyse-redesign iterations; mixed data; yields both a working intervention and design principles/theory.	Ideal for curriculum, resource and pedagogy development (workshop tools, assessment instruments); bridges theory and practice; ecologically valid; produces transferable design principles.	Researcher-as-designer entanglement threatens objectivity; resource-intensive; contested rigour and reporting standards; design hard to separate from context.	Brown (1992); Design-Based Research Collective (2003); Anderson & Shattuck (2012); McKenney & Reeves (2019).
Mixed methods Integrated	Combine quantitative and qualitative strands to answer questions neither could alone; integration is the defining feature. Pragmatist.	Convergent, explanatory- or exploratory-sequential, or embedded designs; joint displays; meta-inferences across strands.	Breadth plus depth; corroboration and complementarity; strong for complex curriculum and assessment questions and for policy audiences valuing both scale and story.	Demands competence across paradigms; integration often superficial (parallel, not mixed); resource-heavy; the incompatibility debate.	Creswell & Plano Clark (2018); Tashakkori & Teddlie (2010).
Discourse & policy analysis (incl. WPR) Qualitative / critical	Analyse how language, texts and discourse construct meaning, subjects and “problems”, and interrogate power in	Policy texts, media and interviews; critical discourse analysis, genealogy, and “What’s the Problem	Exposes how curriculum and assessment policy frames problems, learners and legitimate	Interpretive and contestable; charged with relativism; limited aggregative or predictive power;	Fairclough (2003); Gee (2014); Bacchi (2009); Ball (1994).

Methodology & family	Aim & logic of inquiry	Design, data & analysis	Affordances	Constraints & critiques	Key sources
	policy. Post-structuralist/critical.	Represented to be? problematisation.	knowledge; denaturalises categories; strong for policy scholarship and governance critique.	resists prescriptive solutions.	
Q methodology Mixed — subjectivity-focused	Systematically identify and model shared viewpoints by factor-analysing rank-ordered sorts of statements. Bridges qual and quant; interpretivist with quantitative rigour.	Concourse → Q set; participants (P set) rank-sort statements; by-person factor analysis; factor arrays and crib sheets; researcher interprets each viewpoint.	Rigorously surfaces the range of stances on contested topics (assessment, inclusion, curriculum values) with small samples; unites statistical structure with interpretive depth; participant centred.	Not population-generalisable (maps viewpoints, not their prevalence); Q-set construction is consequential; sorting is demanding; specialist and often misunderstood.	Stephenson (1953); Brown (1980); Watts & Stenner (2012); McKeown & Thomas (2013).
Systematic review & evidence synthesis Secondary	Locate, appraise and synthesise existing studies transparently to answer a review question; aggregative (meta-analysis) or configurative (qualitative synthesis). Post-positivist to interpretive.	Protocol, explicit search, screening, quality appraisal and extraction; meta-analysis, meta-ethnography, thematic or realist synthesis; PRISMA reporting.	Consolidates the evidence base for policy and practice (what supports attainment, effective feedback); reduces bias vs narrative review; identifies gaps and informs commissioning.	Only as good as the included studies; publication and language bias; resource-heavy; aggregative forms may flatten context; protocol rigidity.	Gough et al. (2017); Booth et al. (2016); Page et al. (2021).

At the end of this chapter, readers will have a menu of possible ways to structure their entire study. We underline that the choice of approach should align with the research question, context, and ethics. For example, it would be inappropriate to claim experimental rigor if your study was actually observational (and vice versa). We double-check our example approaches: the school turnaround case study might

conclude after demonstrating how multiple perspectives gave a holistic understanding; the quasi-experimental maths curriculum case might highlight the need to interpret results with caution. The conclusion suggests piecing it together: first define question (Chapter 3), pick participants (Chapter 4), ensure ethics (Chapter 5), shape your argument (Chapter 6), choose methods (Chapter 7), and then see which overall

structure ties it all neatly together. We note that sometimes researchers even combine approaches (mixed methods or sequential designs, which we'll see in the next chapters). The key takeaway: no matter the approach, clarity and coherence are paramount. With an approach chosen, you have a clearer blueprint — and in the next chapter on research paradigms

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(Chapter 11), we will discuss the deeper assumptions (worldviews) underlying those approaches. For now, think of Chapter 10 as surveying the map: you see different paths you could take, and you pick one that suits your trip's goals and constraints.

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chapter eleven

11. Research paradigms for education, curriculum and policy scholarship

Introduction

In this chapter, we look behind the scenes at research paradigms — the fundamental worldviews or assumptions that underlie how we do research. While approaches and methods are about what you do, paradigms answer why you do it that way, based on beliefs about knowledge and reality. We introduce common paradigms in education research: positivism (often linked with quantitative research), interpretivism (linked with qualitative research), and critical theory (focused on power, equity, and social change).

We begin by defining each in plain terms. Positivism assumes that there are objective truths to be discovered, often using numbers and experiments. For example, a positivist study might confidently state “Our data show X causes Y” and present it as fact. We might illustrate with a simple analogy: measuring plant growth under different fertilizers as if classroom variables were natural laws to test. Interpretivism assumes that reality is constructed by individuals’ experiences; it values understanding people’s perspectives. Here, an example could be exploring how students feel about collaborative learning — interpretivism says those feelings are real and worth understanding on their own terms. Critical

Theory adds a focus on inequality and power — for instance, a critical approach to curriculum might examine whose voices are included or excluded in what gets taught. We use a concrete education scenario: dissecting a school’s history curriculum to see which cultural perspectives are centred. Each paradigm is made relatable, with examples of research questions and methods typical of that paradigm.

We also introduce other labels you might encounter: constructivism, pragmatism, feminism, etc., noting how many studies mix elements. We stress that a paradigm influences decisions: the techniques you choose, how you interpret data, even what counts as evidence. A pragmatic example: if you hold an interpretivist worldview, you might prioritize interview data and storytelling; a positivist might prioritize statistical trial results. A key point is that paradigms are not right or wrong; they suit different purposes.

Table 19 compares paradigms on dimensions like “View of Reality (Ontology),” “View of Knowledge (Epistemology),” and “Typical Methods.” The text would guide readers in reading it:

for example, interpreting that in positivism, reality is seen as singular and observable, whereas in interpretivism, reality is multiple and subjective. If the table lists critical theory as believing that reality is shaped by social forces and that the

researcher aims to change conditions, the commentary might point out how this influences method: for instance, a critical researcher might both gather data and engage in advocacy.

Table 19. Common research paradigms in education, curriculum and policy scholarship¹⁷

Paradigm	Ontology & epistemology	Typical approaches	Affordances	Constraints & critiques	Key theorists & sources
Positivism / Objectivist / empiricist	Ontology: naïve realism — a single, stable reality governed by universal laws. Epistemology: objective, value-free knowledge; the detached observer verifies law-like regularities.	Experimental and quantitative: hypothesis testing, RCTs, large-scale surveys, standardised measurement and statistical generalisation.	Enables scale, comparison and generalisation; supplies effect sizes and “what works” evidence for policy; strong on replicability, transparency and evaluating interventions and attainment metrics.	Strips context, meaning and agency; reduces education to measurable outputs; weak on curriculum as value-laden selection; risks scientism and privileging the easily counted.	Comte; Popper (1959/2002); Cohen et al. (2018).
Post-positivism / Critical / fallibilist realism	Ontology: a real world that is only imperfectly and probabilistically apprehendable. Epistemology: knowledge is conjectural and falsifiable; objectivity is a regulative ideal pursued via triangulation and peer scrutiny.	Predominantly quantitative but open to mixed methods: quasi-experiments, modelling, falsification and warranted assertion.	Retains rigour and generalisation while conceding fallibility; underpins much evidence-based policy and effectiveness research; more defensible than naïve positivism; supports cumulative knowledge-building.	Still anchored in measurement and prediction; can marginalise interpretive depth and power relations; “evidence-based” framings may obscure the normative choices inside curriculum.	Popper (1959/2002); Phillips & Burbules (2000).

¹⁷ Paradigms are presented as analytic ‘ideal types’ along a spectrum from realist/objectivist to relational/posthumanist; in practice much education, curriculum and policy research is pluralist, blending stances (e.g. pragmatist mixed methods, or realist mixed designs). Choice of paradigm should follow the research problem and its purposes rather than disciplinary habit.

Paradigm	Ontology & epistemology	Typical approaches	Affordances	Constraints & critiques	Key theorists & sources
Interpretivism / Constructivism Subjectivist	Ontology: relativist — multiple, socially constructed realities. Epistemology: knowledge is co-constructed and context-bound; the aim is verstehen (understanding meaning) rather than causal explanation.	Qualitative and naturalistic: ethnography, case study, phenomenology, interviews and observation; thematic and narrative analysis; trustworthiness criteria.	Yields rich, contextual understanding of teaching and the lived, enacted curriculum; foregrounds teacher and pupil meaning making and identity; illuminates how policy is interpreted on the ground.	Limited statistical generalisation; heavy demands of reflexivity; can underplay material structures and power; findings are situated and harder to scale for policy.	Weber; Berger & Luckmann (1966); Guba & Lincoln (1994); Crotty (1998).
Critical theory / Transformative incl. critical pedagogy, participatory	Ontology: historical realism — reality is shaped by power, ideology, class, race, gender and ability, sedimented over time. Epistemology: knowledge is value-laden and political; inquiry serves emancipation and social justice.	Ideology critique, critical ethnography, participatory and action research, praxis; often mixed; the researcher acts as advocate and co-participant.	Exposes whose knowledge counts in curriculum (selection, legitimisation, the hidden curriculum); centres equity, inclusion and voice; drives change-oriented, participatory policy work; strong normative purchase.	Explicitly value-committed, so charged with bias and advocacy; risks predetermined conclusions; tension between researcher authority and participant emancipation; can be theory-heavy.	Habermas (1972); Freire (1970); Apple (2004); Mertens (2007); Kemmis & McTaggart (2005).
Pragmatism Consequentialist / problem-driven	Ontology/Epistemology: anti-dualist — rejects the realism/relativism binary; reality is what proves workable in inquiry; knowledge is provisional, instrumental and judged by its consequences.	Methodological pluralism: mixed methods, design-based research and abduction; inquiry is organised around problems rather than paradigms.	Licenses mixed-methods and design-based curriculum-development research; problem-focused and practitioner-relevant; bridges evidence and practice; well suited to intervention design and improvement science.	Charged with under-theorising ontology; “what works” can smuggle in unexamined ends and values; risks eclecticism without coherence; leaves open whose purposes count.	Dewey (1938); Biesta & Burbules (2003); Morgan (2007).
Critical realism / Social realism Depth ontology	Ontology: stratified (real / actual / empirical) — an	Retroduction to underlying mechanisms; explanatory and	Reconciles objectivity with social construction; powerful for curriculum theory (knowledge	Abstract and demanding; “powerful knowledge” is contested (elitism	Bhaskar (2008); Archer (1995); Young (2008); Maton (2014).

Paradigm	Ontology & epistemology	Typical approaches	Affordances	Constraints & critiques	Key theorists & sources
Post-structuralism / Postmodernism Anti-foundational	intransitive world of generative mechanisms. Epistemology: epistemic relativism with judgemental rationality; knowledge is fallible but not arbitrary. Social realism extends this to knowledge in the curriculum.	morphogenetic case study; mixed methods; Legitimation Code Theory analyses.	differentiation, “powerful knowledge”, epistemic access); avoids both positivist reduction and relativist flatness; explains structure and agency.	critique); underlying mechanisms are hard to operationalise; can be read as re-legitimising traditional disciplines.	Foucault (1972); Lyotard (1984); Ball (1994); Bacchi (2009).
	Ontology: reality and subjectivity are discursively produced; no fixed truth outside discourse.	Discourse analysis, genealogy, deconstruction and problematisation — e.g. “What’s the Problem Represented to be?”, policy-as-discourse analysis.	Powerful for policy analysis: how “problems”, subjects and norms are constituted in policy texts; denaturalises taken-for-granted curriculum categories; attends to governance, normalisation and subjectivity.	Charged with relativism and political paralysis; resists prescription and “what to do next”; can be inaccessible; ill-suited to aggregation or generalisable claims.	
	Epistemology: knowledge and power are inseparable; grand narratives are treated with suspicion, and meaning is unstable and deferred.				
Post-qualitative / New materialism Posthumanist / relational	Ontology: flat and relational — a more-than-human world of entangled human and non-human agencies. Epistemology: knowing as material-discursive intra-action; the human subject and method itself are decentred.	Post-methodological: refuses fixed procedure; diffractive analysis, assemblage and rhizomatic inquiry, thinking-with-theory, attends to affect, matter, bodies and technologies.	Reframes learning and curriculum as socio-material assemblage (bodies, tools, spaces, digital and AI); apt for technology, design and workshop practice; generative, experimental and ethically attuned to materials.	Deliberately resists replicability, method and evaluation criteria; hard to justify to policy audiences; risks jargon; quality standards remain unsettled; limited direct policy leverage.	Deleuze & Guattari (1987); Barad (2007); St. Pierre (2011); Braidotti (2013).

The final note of Chapter 11 is that being aware of your paradigm helps you be consistent and clear. We encourage readers to reflect: “What do you believe about knowledge? Does your belief align with how you’re conducting your study?” We recap the main paradigms and their implications in a simple way. For example, we might revisit an earlier example: the maths teacher’s study could be framed either way — a positivist might quantify test scores, whereas an interpretivist might focus on students’ experiences learning fractions. Both answer questions, but in different ways. The conclusion also gently reminds researchers that sometimes paradigm differences become technical jargon, but at heart,

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it’s about respect for how people think. Finally, we point forward: knowing your paradigm feeds into choosing mixed methods (which we’ll cover next) by making explicit how you combine different kinds of truth. We leave this chapter by answering a final quick question: “Why does this matter?” The answer given is because even a well-run study can be confusing if the readers don’t see the underlying assumptions. By the end of Chapter 11, the reader should feel comfortable saying, “I see the worldview behind my research, and I can explain it.” This clarity will strengthen the coherence and credibility of everything they do next.

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chapter twelve

12. Qualitative, quantitative and mixed methods in education, curriculum and policy scholarship

Introduction

Chapters 8 and 9 dealt with analysis of qualitative and quantitative data separately. Chapter 12 brings them together, tackling mixed methods. This chapter's job is to clarify when, why, and how to use qualitative, quantitative, or both in a single study. We start by acknowledging that sometimes a single method tells only part of the story. Using both types can provide a fuller picture. For example, a study on student attendance might use attendance records (quantitative) to see who is missing school and also interviews (qualitative) to understand why they miss.

We discuss the basic types of mixed-method designs: sequential explanatory (quantitative first, then qualitative to explain findings), sequential exploratory (qualitative first to develop hypotheses, then quantitative to test them), and concurrent/parallel (gathering both types together). We use scenarios to illustrate each: a sequential explanatory example could involve running a quick survey on school climate (quantitative), then interviewing a subset of students to unpack their survey answers. An exploratory example

might start with focus groups with teachers to identify issues, then designing a larger questionnaire based on those insights. A concurrent example might involve handing out a questionnaire in class while also observing the class at the same time. For each, we give a step-by-step flow, so readers see how the pieces fit in time.

We emphasise that mixing methods isn't done on a whim; it should serve the research questions. If your questions are best answered by numbers and voices, mixing is sensible. Practical advice is given, for instance, aligning data collection schedules (it might be tricky to interview students during exam week, so plan accordingly) and integrating findings (merging charts and quotes in a single report). We also discuss challenges: mixed methods studies can be time-consuming and require diverse skills. To lighten the concept, we include an analogy: think of it as cooking a dish with both vegetables and spices — each ingredient brings flavour, but they must balance. Tables might list strengths and weaknesses of mixed versus single methods.

Table 20. Qualitative, quantitative and mixed methods approaches in education, curriculum and policy scholarship

Approach & paradigm	Logic & what it does	What it CAN tell us (affordances)	What it CANNOT tell us (constraints)	Key sources
Qualitative Interpretivist / constructivist; inductive	Explores meaning, experience, process and context in depth through non-numerical data (interviews, observation, texts, artefacts). Inductive and abductive theory-building; small purposive samples; naturalistic settings. Asks: what is going on here, and how and why?	How people understand and experience phenomena, and the meaning behind their practice; how processes unfold and why; context, culture and the enacted or hidden curriculum; unanticipated factors and new concepts. Yields rich, holistic, situated accounts; supports analytic generalisation and theory-building; gives voice. Strong on the how and the why.	How common, how much, or how strong — no prevalence, magnitude or effect sizes; whether findings hold across a population (no statistical generalisation); causal magnitude; comparison at scale; trends. It is not designed to test hypotheses or to measure and is vulnerable to researcher subjectivity and labour-intensive.	Denzin & Lincoln (2018); Braun & Clarke (2022); Maxwell (2013).
Quantitative (Post)positivist; deductive	Measures variables and tests hypotheses about relationships and effects using numerical data and statistics. Deductive; larger probability samples; standardised instruments; seeks generalisation, prediction and (in controlled designs) causal inference. Asks: how much, how many, how often, is there an effect or association?	Prevalence, distribution, magnitude and trends; the strength and direction of relationships; whether an intervention causes an effect and how large it is (in experimental designs); generalisation from sample to population; comparison across large groups. Produces replicable, cumulative evidence. Strong on how much and does it work.	Why or how — the meaning, mechanism or lived experience behind the numbers; whatever was not measured (construct under-representation); context and nuance. It can show association, or even effect, but not the situated reasoning; it is poor at emergent or unanticipated phenomena and reduces complexity to measurable variables; correlation is not causation outside strong designs.	Field (2018); Cohen et al. (2018); Creswell & Creswell (2018).
Mixed methods Pragmatist; integrative	Deliberately combines and integrates qualitative and quantitative strands so each offsets the other's limit. Integration — not mere co-presence — is the defining move: convergent, explanatory- or exploratory-sequential and embedded designs, yielding meta-inferences. Suits complex	Both the what and how—much and the how and why; corroboration (triangulation), complementarity, and development (one strand shaping the other). It can explain statistical patterns with qualitative depth or test the reach of qualitative insight. Strong for complex curriculum and assessment questions and for policy audiences valuing both scale and story.	It does not dissolve the limits of each strand — weak survey plus weak interviews is still weak; integration is often superficial (parallel, not mixed); it demands competence and resources across both traditions; and the incompatibility debate lingers. It can also obscure which strand actually carries a claim. It gives more, not everything.	Creswell & Plano Clark (2018); Tashakkori & Teddlie (2010); Greene (2007).

Approach & paradigm	Logic & what it does	What it CAN tell us (affordances)	What it CANNOT tell us (constraints)	Key sources
	questions needing both scale and meaning.			

Beyond the trichotomy: approaches the qual-quant-mixed frame does not capture

The qualitative / quantitative / mixed methods split classifies empirical, primary research by the form of its data. It leaves out at least three families: (1) non-empirical scholarship — conceptual, theoretical, philosophical and historical work that reasons rather than gathers data; (2) approaches that

deliberately cross or refuse the binary (Q methodology, arts-based, participatory-as-paradigm and post-qualitative inquiry; and (3) secondary and computational forms) evidence synthesis and data-science methods. Most of these are hybrids or distinct worldviews rather than a tidy “fourth type”.

Table 21. *Approaches the trichotomy frame does not capture*¹⁸

Approach	Why it sits outside the qual-quant-mixed frame	What it uniquely offers (and its limit)	Key sources
Conceptual, theoretical & philosophical inquiry	Non-empirical: it argues, analyses concepts and builds or critiques theory rather than gathering or analysing data. Much curriculum theory and policy critique is of this kind.	Clarifies what concepts mean, reframes problems, and addresses normative “what ought” questions that no dataset can settle. Its warrant is the quality of the argument, not evidence — and it cannot establish empirical facts.	Pring (2015).
Q methodology	Deliberately bridges the divide (“qualiquantological”): quantitative in technique (by-person factor analysis) but interpretive in purpose (studying subjectivity).	Reveals the distinct shared viewpoints on a contested topic and their internal structure, rigorously and with small samples — but maps the range of views, not how prevalent each is in a population.	Watts & Stenner (2012).

¹⁸ The trichotomy remains a useful first cut, but the sharper question is rarely “qual, quant or mixed?” so much as what the research question demands and what kind of claim you need to warrant: description, measurement, meaning, causal effect, conceptual clarity, historical explanation or practical improvement. Approach follows question, not the reverse.

Arts-based & practice-based research	Treats artistic or design making itself as a mode of inquiry; the artefact and the aesthetic experience are findings, not data to be coded.	Accesses embodied, tacit and aesthetic knowing and communicates it evocatively — valuable for design and technology practice — but resists conventional validity criteria and generalisation.	Barone & Eisner (2012); Leavy (2020).
Participatory & action research (as a paradigm)	More a worldview than a data type: cyclical, practitioner-led inquiry in which knowledge is produced with rather than on participants, joining the political and the empirical.	Tells us what actually improves practice in situ and democratises inquiry — but is local, value-committed and not designed for detached generalisation.	Reason & Bradbury (2008); Heron & Reason (1997).
Post-qualitative / post-methodological inquiry	Explicitly refuses fixed method, the category of “data”, and the qual/quant framing itself; thinks with theory to unsettle taken-for-granted concepts.	Generates new questions and reconceptualisations and resists procedural closure — but is, by design, non-replicable, non-aggregative and hard to communicate to policy audiences.	St. Pierre (2011); Lather & St. Pierre (2013).
Systematic review & evidence synthesis	Secondary: it synthesises existing primary studies rather than generating new qualitative, quantitative or mixed data.	Tells us what the existing body of evidence collectively says — aggregatively (meta-analysis) or configuratively (qualitative synthesis) — and where the gaps are but is bounded by the quality and coverage of the studies it includes.	Gough et al. (2017).
Computational, digital & data-science methods	Learning analytics, natural-language processing, social-network analysis and “big data” strain the classic quantitative mould — often exploratory and abductive at scale, working with found digital traces.	Detects patterns, networks and trajectories across very large or real-time datasets — but raises acute questions of privacy, bias and meaning, and pattern is not explanation.	Salganik (2018); Siemens & Long (2011).
Historical & documentary research	Reconstructs and interprets the past from sources; neither hypothesis-testing quantitative nor naturalistic qualitative work in the usual sense.	Explains how present curriculum and policy arrangements came to be and denaturalises them by tracing change over time — but depends on surviving, partial sources and cannot be replicated or generalised in the empirical sense.	McCulloch (2004).

As we close Chapter 12, we reinforce that the ultimate goal is clarity and insight, not just more data types for their own sake. We restate that mixing methods is powerful but should be purposeful — every piece of data included should help answer a research question. We might reiterate the

attendance example: quantitative data flags an issue (which students miss school most often) and qualitative follow-up reveals context (those students mention needing to work after school). The conclusion also addresses common concerns reported by students: “I’m good with numbers, not

words” or “I don’t know both surveys and interviews.” We encourage readers to collaborate (with colleagues or mentors) if needed, or to focus on one approach thoroughly rather than force a mix halfway. The chapter ends with a brief reflection exercise: given their own research question, students are prompted to consider whether one method answers it fully or if mixing could enrich the insights. We

reassure them that whether they choose purely qualitative, purely quantitative, or a mix, the reasoning behind that choice (as laid out throughout the book) makes their study rigorous. With mixed methods covered, the next chapter (13) will dive even deeper into the philosophical foundations underlying all this — essentially revisiting how the big questions of reality and knowledge underlie every decision we’ve discussed.

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chapter thirteen

13. The philosophical foundations for education, curriculum and policy scholarship

Introduction

Building on our journey through methods and analysis, Chapter 13 takes us back to fundamentals: the philosophical foundations of research — mainly ontology (what is reality?) and epistemology (what is knowledge and how can we know it?). This chapter ties together the threads of the whole playbook, reminding us that behind every method, question, and analysis is a set of beliefs. We introduce these ideas gently: you don't need a philosophy degree; instead, think of puzzles like "Is there one true curriculum that all students should learn, or do students experience curriculum differently?" and "When we survey people, are we finding answers that existed independently, or constructing meaning through our questions?" These everyday questions get at the heart of ontology and epistemology.

We then formalise the concepts with examples. Ontology: For instance, consider whether discipline in the classroom is a fixed reality (like a formula) or a social construct (varies by culture). We might relate this to the paradigms from Chapter 11: positivism suggests discipline can be measured objectively (e.g. count disciplinary referrals), whereas interpretivism

suggests discipline is defined by social context (what one teacher calls "disorder" another might consider "energetic learning"). Epistemology: We frame this as how we believe knowledge is created. One approach is objectivist (noticing that facts exist out there to be discovered), another is subjectivist (knowing that all our findings depend on perspective). A practical example: when two teachers observe the same classroom, do they "see" the same level of engagement, or are their interpretations influenced by their individual experiences and expectations? We explain that acknowledging these positions helps clarify why researchers report findings the way they do.

The chapter explores common stances: realism vs relativism in ontology, empiricism vs. interpretivism in epistemology. We match them to research practice. For example, if you lean toward a realist ontology, your research might focus on finding patterns or laws (maybe using statistical analysis); if you lean relativist, you might emphasise narratives and multiple viewpoints. We ask the reader to reflect on where they stand and illustrate by revisiting earlier examples: "In

our maths classroom study, did we treat the data (test scores, student comments) as uncovering an objective truth about learning, or as stories shaped by context and perception?”

Because this can be abstract, we include concrete thought experiments: e.g. analysing a curriculum document — is the meaning embedded in the text (something to extract) or is meaning produced in the reader’s interpretation? Such questions mirror philosophical debates in a playful way. A final table might outline combinations (e.g. “Ontology: Realism, Epistemology: Positivism” vs “Ontology: Relativism,

Epistemology: Interpretivism”), showing how they map to research habits (like reliance on numbers vs. descriptions). The commentary on this table would highlight how each philosophical pairing leads to different styles of research and write-up.

Definitions, the assumptions each makes, and how the major research paradigms understand each — sequenced in the conventional nested order (ontology → epistemology → methodology → axiology → praxeology) rather than alphabetically, since the assumptions build on one another.

Table 22. *Definitions of Ontology, Epistemology, Methodology, Axiology & Praxeology*¹⁹

Term	Definition & core question	Key assumptions it makes	Illustrations: how different paradigms understand it
Ontology ἄκ. ὄν / ὄντος, “being” + λόγος	The branch of metaphysics concerned with the nature of being, existence and reality — what exists, and in what form. Asks: What is the nature of reality? What kinds of things exist and what is their status — one reality or many?	Takes a position on whether reality is single, objective and external, or multiple, constructed and mind dependent. The most foundational assumption — the others largely follow from it.	Positivist / post-positivist: a single real world exists independently of the observer (realism); it is law-governed and (imperfectly) knowable. Interpretivist / constructivist: multiple realities are socially and individually constructed (relativism); reality is mind- and language-dependent. Critical / transformative: one real world, but historically shaped by power, ideology and structures that come to seem natural (historical / critical realism). Pragmatist / participatory: reality is what proves workable in experience and action; a participative world of subjective-objective encounter.

¹⁹ These are the interlocking assumptions that make up a research paradigm: ontology (what is there to know) shapes epistemology (what and how we can know it), which shapes methodology (how we should inquire); axiology (the place of values) and praxeology (the relationship to practice and action) run through all of them. A coherent study aligns them. Ontology, epistemology and methodology form the classic triad (Crotty, 1998; Grix, 2002); axiology was foregrounded as a distinct paradigm element by Lincoln, Lynham and Guba (2011); and praxeology —

Term	Definition & core question	Key assumptions it makes	Illustrations: how different paradigms understand it
Epistemology Gk. epistēmē, "knowledge" + lógos	The theory of knowledge — its nature, sources, scope and justification, and the relationship between the knower and the known. Asks: What can be known, how, and what counts as warranted knowledge? What is the researcher's relationship to what is studied?	Takes a stance on objectivity versus subjectivity, the detachment or involvement of the knower, and what makes a knowledge-claim legitimate. Follows from the ontology.	Positivist / post-positivist: objective, value-free knowledge is possible; a detached observer discovers facts and tests law-like regularities. Interpretivist / constructivist: knowledge is subjective and co-constructed; understanding (verstehen) arises through interaction between knower and known. Critical / transformative: knowledge is value-laden and political; valid knowing exposes ideology and serves emancipation. Pragmatist / participatory: knowledge is provisional and instrumental, judged by its consequences; multiple ways of knowing — propositional, practical and experiential.
Methodology Gk. métodos, "pursuit / way" + lógos	The strategy, design and logic of inquiry that links research questions to methods — the rationale for how a study proceeds (distinct from methods, the specific techniques). Asks: How should we go about finding out? What logic of inquiry will produce warranted answers, given our ontology and epistemology?	Assumes that method choices must be justified by, and coherent with, the underlying ontological and epistemological commitments — not chosen by habit or convenience.	Positivist / post-positivist: experimental and survey designs; deductive hypothesis-testing; controlled, replicable, quantitative measurement seeking generalisation. Interpretivist / constructivist: ethnography, case study, phenomenology; inductive, naturalistic, qualitative inquiry seeking depth and meaning. Critical / transformative: ideology critique, participatory and action research, praxis; inquiry deliberately oriented to change. Pragmatist / participatory: mixed methods, design-based and action research; problem-driven pluralism; cycles of action and reflection.

the least standardised of the five — draws on practice theory and practitioner traditions (Bourdieu, 1977; Schön, 1983; Carr & Kemmis, 1986), and is especially pertinent to practical, design- and making-based subjects.

Term	Definition & core question	Key assumptions it makes	Illustrations: how different paradigms understand it
Axiology Gk. axia, “value / worth” + lógos	The branch of philosophy concerned with value — ethics and aesthetics — and the study of what is worthwhile; in research, the role and place of values. Asks: What is the role of values in inquiry? Can or should research be value-free? What is worth knowing, and what is the ethical conduct and purpose of the study?	Takes a position on whether values can be bracketed or are inescapable, whose values count, and the moral purposes and ethics of the research.	Positivist / post-positivist: research should be value-free and value-neutral; the researcher’s values are bracketed out to protect objectivity. Interpretivist / constructivist: research is value-laden and value-bound; the researcher’s values and positionality are acknowledged and made transparent. Critical / transformative: research is unavoidably value-driven and morally committed to justice and equity; “neutrality” is itself a value-position. Pragmatist / participatory: values are integral and shape which problems and consequences matter; inquiry is oriented to worthwhile ends and human flourishing.
Praxeology Gk. prâxis, “action / doing” + lógos	The study of practice and purposeful human action — the nature of skilful, situated conduct and the relationship between knowing and doing; in research, how inquiry connects to (and improves) practice. Asks: What is the nature of purposeful practice, and how does research relate to action, skill and change? How is knowing enacted in doing?	Assumes that practice is itself a form of knowing (not merely the application of theory), and takes a position on whether research should describe, inform or transform practice — especially salient for practical, making-based fields such as technology education.	Positivist / post-positivist: practice is the technical application of validated knowledge; research produces evidence that practitioners then implement (“what works”). Interpretivist / constructivist: practice is meaningful, tacit and context-bound; research illuminates the reasoning embedded in skilful action (reflection-in-action). Critical / transformative: praxis unites reflection and action to change unjust conditions; research and practice are inseparable moments of emancipatory action. Pragmatist / participatory: practical knowing (knowing-how) is a primary form of knowledge; research proceeds through cycles of action and reflection that improve practice with practitioners.

In concluding the playbook, we tie all chapters together. We emphasise that every choice made along the way — the problem you define (Chapter 3), how you pick participants (Chapter 4), the methods and analyses (Chapter 7–9), the

approach (Chapter 10), and the paradigm (Chapter 11) — has philosophical underpinnings. Recognising this makes your research transparent and defensible. We might finally revisit a complete example: say a school exploring its literacy

programme. We'd recap how ontology influenced whether they looked for one definitive "reading level" metric or multiple indicators of literacy. We reinforce that there is no "one true philosophy" — the aim is to be clear about one's stance and consistent in reasoning. The chapter ends with a gentle reminder that philosophy doesn't have to feel distant:

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it's just about being thoughtful. And with that, we conclude the book's journey, full circle from the practical frustrations that started it, to empowered, philosophically aware researchers ready to carry a "golden thread" through any inquiry.

chapter fourteen

14. Bringing it all together into an inquiry: planning for and doing your research project

Introduction

The preceding chapters have set out the building blocks of educational, curriculum and policy scholarship: the nature of a research problem, the framing of questions, the range of methods, the demands of ethics, the shape of an argument, and the philosophical foundations that underpin every choice. This final chapter draws those threads together and follows the reader through the process of designing and carrying out an inquiry from first idea to defensible study.

Research design is best understood not as a checklist but as a sequence of interlocking decisions, each of which constrains and informs the next. We present the process as eight stages: (1) discovering and defining the research problem; (2) identifying the research questions; (3) selecting the method most suitable for answering them; (4) identifying and justifying the population and sample; (5) engaging with ethical issues and safeguarding; (6) settling on an argument direction and approach; (7) understanding the type of data gathering and analysis to be undertaken; and (8) finding your

positionality and developing a theoretical framework. Numbered though they are, the stages are iterative rather than strictly linear: a decision taken late (an ethical constraint, say, or a limit on access to a sample) will often send the researcher back to refine the problem or the questions.

The test of a well-designed study is coherence. Each stage should follow recognisably from the one before, so that a reader can trace an unbroken line (a “golden thread”) from the problem, through the questions and method, to the data and the claims that the study is entitled to make. The remainder of this chapter sets out the eight stages, then works through three contrasting scenarios (a classroom practitioner inquiry, a curriculum evaluation, and a policy study) to show how the same design logic produces very different, but equally rigorous, studies.

The golden thread: from problem to design

A design is coherent when every stage can be justified by reference to the one before it. The problem motivates the questions; the questions dictate the method; the method shapes who is studied and how; ethics conditions what is permissible; and the researcher's positionality and theoretical framework colour how the resulting data are read. Weakness at any point (a vague problem, questions the method cannot answer, a sample that cannot speak to the

questions) breaks the thread and undermines the claims the study can make.

Table 23 summarises the eight stages as a set of guiding questions and the design decision each one produces. It is intended as a planning aid: a researcher can work down the table, and then loop back, until the answers form a single, defensible line of reasoning.

Table 23. *The eight stages of designing an inquiry*

Stage	Guiding question	Design decision it produces
1. Defining the research problem	What, precisely, is the matter of concern, and why does it warrant inquiry?	A bounded, researchable problem statement grounded in practice, literature and context.
2. Identifying the research questions	What do we need to find out in order to address the problem?	A small set of clear, answerable questions (with any sub-questions) that frame the whole study.
3. Selecting the method	What logic of inquiry will produce warranted answers to these questions?	A methodology and design — case study, survey, action research, mixed methods and so on — justified by the questions.
4. Population and sample	Whose experience, data or setting can answer the questions, and who will actually be included?	A defined population and a justified sampling strategy, with inclusion criteria and honest limits to generalisation.
5. Ethics and safeguarding	How do we protect participants and act with integrity, especially where children or vulnerable groups are involved?	Informed consent and assent, data protection, risk assessment and safeguarding measures, with ethical approval secured.
6. Argument direction and approach	What kind of claim is the study making, and how will it be warranted?	A stance — descriptive, explanatory, interpretive, critical or evaluative — and a line of argument the evidence can bear.

Stage	Guiding question	Design decision it produces
7. Data gathering and analysis	What data are needed, how will they be generated, and how analysed?	Instruments and procedures for collection, and an analytic approach (thematic, statistical, framework) matched to the data.
8. Positionality and theoretical framework	Where do I stand in relation to the study, and through what conceptual lens will I interpret it?	A reflexive account of the researcher's position and a theoretical framework that guides interpretation.

Working through the eight stages

Defining the research problem

A study begins not with a method but with a felt difficulty — something puzzling, unsatisfactory or contested in practice, policy or the existing literature. The task at this stage is to sharpen a broad area of concern into a specific, researchable problem that is bounded in scope, significant enough to warrant inquiry, and grounded in what is already known (Cohen, Manion & Morrison, 2018). A problem that is too large cannot be answered; one that is trivial is not worth answering.

Identifying the research questions

Questions are the pivot of the whole design: everything downstream is chosen to answer them. Good questions are clear, answerable within the available resources, and aligned to the problem. Their grammar signals the kind of study implied — open “how” and “why” questions invite interpretive or explanatory inquiry, while “what” and “how much”

questions invite description or measurement. A small number of well-formed questions, with sub-questions where necessary, is preferable to a long, unfocused list.

Selecting the method

The method should be chosen because it can answer the questions, not from habit or convenience. This means matching the methodology to the logic the questions demand: experimental and survey designs for causal or descriptive-quantitative questions; case study, ethnography or phenomenology where meaning and process are at stake; action research where the aim is to improve practice; and mixed methods where the questions have both explanatory and exploratory facets (Creswell & Plano Clark, 2018).

Identifying and justifying the population and sample

The population is the group to which the questions refer; the sample is who or what is actually studied. This stage

specifies both and justifies the sampling strategy — random or stratified where representativeness and generalisation matter, purposive where information-rich cases are sought, convenience where access is the binding constraint. It also states honestly the limits this places on how far findings can be generalised or transferred.

Engaging with ethical issues and safeguarding

Ethics is a continuing responsibility rather than a hurdle to clear at the outset. It encompasses informed consent and, for children, assent alongside parental or gatekeeper consent; voluntary participation and the right to withdraw; confidentiality, anonymity and data protection; and, where children or vulnerable participants are involved, safeguarding arrangements and appropriate clearance. In education these obligations are guided by the ethical guidelines of the British Educational Research Association (BERA, 2018) and by formal institutional approval, which should be secured before any data are gathered.

Settling on an argument direction and approach

Every study makes a kind of claim, and the researcher must decide which: descriptive (what is the case), explanatory (why), interpretive (what it means), critical (whose interests it serves) or evaluative (how well something works). Settling the argument direction disciplines the analysis and guards

against overclaiming — asserting causation from a design that can only describe, or generalising from a single case — so that the conclusions remain within what the evidence can bear.

Understanding the type of data gathering and analysis

Data gathering and analysis are planned together and matched to the questions. Qualitative data — from interviews, observation or documents — are typically analysed thematically or through framework analysis (Braun & Clarke, 2006), while quantitative data from tests, surveys or administrative records are analysed statistically. Deciding the analytic approach before collection begins ensures that the data generated will actually answer the questions, rather than leaving the researcher with material that cannot be interpreted.

Finding positionality and developing a theoretical framework

Finally, the researcher makes explicit where they stand in relation to the study — as insider or outsider, and with what values and assumptions — through disciplined reflexivity, since positionality shapes access, interpretation and the trust participants extend. Alongside this sits a theoretical

framework: the concepts and prior scholarship through which the data will be read and to which the findings will

speak. Together, positionality and framework turn a collection of findings into a contribution to knowledge.

Three worked scenarios

The same eight-stage logic underlies studies that look nothing alike. The three scenarios below (a classroom practitioner inquiry, a curriculum evaluation and a policy study) begin from a real concern and route it through the

stages to a rigorous design. Each shows how the problem and questions pull a particular method, sample, ethical posture, argument, analysis, positionality and framework into alignment.

Scenario A: ‘a classroom practitioner inquiry’

A design and technology teacher notices that, in a new Year 9 electronics and programming unit, girls participate less and produce less ambitious outcomes than boys. The concern is one of equity in a practical, making-based subject, and the teacher wants both to understand it and to change it. Because the aim is insight into experience and improvement

in the teacher’s own setting, the study takes the shape of an interpretive, practitioner action–research inquiry rather than a controlled comparison (Table 24).

Table 24. Scenario A routed through the eight stages

Stage	Design decision in this study
1. Problem	Gendered disengagement of girls in a KS3 electronics unit — a bounded equity problem grounded in the teacher’s observation and in literature on gender in technology education.
2. Questions	How do Year 9 girls experience the electronics unit, and what features of the tasks and classroom interactions shape their engagement? (Open, interpretive questions.)
3. Method	Practitioner action research within the teacher’s own classroom, proceeding through cycles of plan–act–observe–reflect (Kemmis & McTaggart, 2005).
4. Population & sample	Population: KS3 girls studying D&T. Sample: the teacher’s two Year 9 classes — a small, purposive, information-rich sample, not a basis for statistical generalisation.

Stage	Design decision in this study
5. Ethics & safeguarding	Parental consent and pupil assent; the right to withdraw; anonymity; safeguarding of children; careful management of the teacher's dual role and power over pupils, following BERA (2018) and institutional approval.
6. Argument	Interpretive and improvement-oriented: the study seeks to understand experience and to inform change in this setting, not to prove cause or generalise across schools.
7. Data & analysis	Lesson observation notes, pupil work samples and focus-group "pupil voice" interviews, analysed thematically (Braun & Clarke, 2006).
8. Positionality & framework	An insider practitioner-researcher, reflexive about teacher-pupil power, reading participation through situated learning and communities of practice (Lave & Wenger, 1991).

Scenario B: ‘a curriculum evaluation’

A multi-academy trust has introduced a new, sustainability-focused Key Stage 3 design and technology curriculum across its secondary schools and wants to know whether it is achieving its aims before committing to a full roll-out. The concern is no longer one classroom but a programme: does the new curriculum improve pupils' designerly knowledge and their engagement with sustainability, and under what

conditions does it do so? Because the trust needs a defensible judgement of worth that can inform a decision, and because outcomes are likely to vary across very different schools, the study takes the shape of a mixed-methods, theory-driven evaluation rather than a single interpretive case (Table 25).

Table 25. Scenario B routed through the eight stages

Stage	Design decision in this study
1. Problem	Whether a newly introduced KS3 sustainable-design curriculum is achieving its intended outcomes across a multi-academy trust, and for which pupils and in which settings — an evaluative problem grounded in the trust's investment and in literature on curriculum implementation and sustainability education.
2. Questions	To what extent has the new curriculum changed pupils' designerly knowledge and their attitudes to sustainability (what, how much), and how do features of school context and teaching shape those outcomes (how, why)? (Mixed descriptive-explanatory questions.)
3. Method	A mixed-methods, theory-driven evaluation combining a pre/post pupil measure across schools with in-depth case studies of contrasting sites, guided by an articulated theory of change (Creswell & Plano Clark, 2018).

Stage	Design decision in this study	
4. Population & sample	Population: KS3 pupils and teachers across the trust's secondary schools. Sample: all schools for the survey component; a purposive selection of contrasting schools (by intake and prior D&T provision) for case study — representative enough for the measure, information-rich for the cases.	
5. Ethics & safeguarding	School gatekeeper consent, parental consent and pupil assent; anonymity of pupils, teachers and schools; safeguarding of children; and careful handling of the evaluator's commissioned role so that findings are not bent toward the trust's preferred conclusion, following BERA (2018) and with institutional approval.	
6. Argument	Evaluative: a warranted judgement of the curriculum's worth and the conditions of its success, stopping short of causal proof where the design cannot support it and resisting pressure to overclaim impact.	
7. Data & analysis	A pre/post pupil questionnaire and knowledge measure analysed statistically for change and difference, alongside teacher interviews, lesson observations and scheme-of-work documents analysed thematically (Braun & Clarke, 2006) and integrated against the theory of change.	
8. Positionality & framework	A commissioned, semi-external evaluator, reflexive about independence and the politics of evaluation, reading outcomes through a realist evaluation lens that asks what works, for whom, and in what circumstances (Pawson & Tilley, 1997).	

Scenario C: ‘a policy study’

A researcher observes that successive national curriculum reforms speak confidently about "digital skills" and "STEM" while design and technology, as a distinct form of knowledge, all but disappears from the policy text. The concern is not what happens in one classroom or trust but how the subject is constituted (or written out) in official policy, and with what

consequences for its standing in schools. Because the aim is to interrogate how the "problem" that technology education is offered to solve is represented, rather than to measure an intervention, the study takes the shape of a critical, documentary policy analysis (Table 26).

Table 26. Scenario C routed through the eight stages

Stage	Design decision in this study
1. Problem	How design and technology is positioned (and frequently rendered invisible) in national curriculum and reform policy across a defined period, and whose assumptions that positioning reflects; a critical policy problem grounded in the researcher's reading of the texts and in the comparative-policy literature.

Stage	Design decision in this study
2. Questions	How is the "problem" to which technology education is offered as a solution represented across the policy corpus, what presuppositions and silences underpin that representation, and how has it shifted through successive reforms? (Critical, interpretive "how" questions.)
3. Method	A qualitative documentary policy analysis of a purposively assembled corpus of curriculum documents, reform reviews and consultation responses, optionally supplemented by elite interviews with policy actors (Bacchi, 2009).
4. Population & sample	Population: the body of national policy texts bearing on the subject. Sample: a purposive, criterion-based selection of key documents across the chosen period (statutory orders, reform reviews, official guidance), with transparent inclusion criteria rather than statistical sampling.
5. Ethics & safeguarding	No children are involved, so ethics centres on the accurate and fair use of public documents, copyright and attribution, the consent and anonymity of any elite interviewees, and honest disclosure of the researcher's own involvement in policy work as a potential conflict of interest (BERA, 2018).
6. Argument	Critical: the study asks whose interests the prevailing problem–representation serves and what it makes difficult to think, advancing an interpretive and critical claim rather than a descriptive or causal one.
7. Data & analysis	The document corpus (and any interview transcripts) analysed through Bacchi's "What's the Problem Represented to be?" questions, tracing representations, presuppositions, silences and effects across the texts.
8. Positionality & framework	An engaged insider to the policy field, reflexive about the risk of reading the texts through prior commitments, working within a critical policy–analysis framework that treats policy as discourse (Bacchi, 2009; Ball, 1993).

And now it's your turn!

Every chapter of this book has been building toward a single moment: the point at which you stop reading about other people's inquiries and begin to design your own. You now have the building blocks; a sense of what makes a problem researchable, a feel for the grammar of good questions, a working knowledge of methods and their logics, an understanding of ethics as an ongoing responsibility, and an appreciation of how positionality and theory shape what you can see and claim. What remains is to put them together.

Start where the three scenarios started: with a felt difficulty. Something in your own practice, setting or reading that puzzles, troubles or provokes you. Do not reach for a method first. The teacher in Scenario A, the evaluator in Scenario B and the policy scholar in Scenario C arrived at very different designs (action research, mixed-methods evaluation, critical documentary analysis) not because they preferred those methods, but because their problems and questions demanded them. Your design should be pulled into shape by your problem, not imposed upon it.

When you have a candidate concern, work it down the eight stages of Table 23, and then loop back:

1. Name the problem precisely, and check it is bounded, significant and grounded.
2. Turn it into a small number of clear, answerable questions.
3. Choose the method those questions demand.
4. Decide whose experience, data or setting can answer them — and be honest about who you can actually reach.
5. Think through ethics and safeguarding from the outset, not as an afterthought.
6. Settle the kind of claim you are entitled to make.
7. Plan data gathering and analysis together, matched to the questions.
8. Locate yourself in the study and name the theoretical lens through which you will read it.

Expect to go round more than once. A design rarely emerges whole; more often an ethical constraint, a limit on access or a second look at the literature sends you back to sharpen the problem or narrow the questions. That iteration is not a sign of failure but the very work of design. The test, each time round, is coherence: can a reader trace an unbroken golden thread from your problem, through your questions and method, to the data and the claims you make? Where the thread holds, you have a defensible study. Where it breaks (a vague problem, a question the method cannot answer, a sample that cannot speak) that is precisely where the next revision belongs.

Your inquiry does not need to be large to be worthwhile. A single thoughtful classroom study, rigorously designed and honestly reported, contributes to the collective understanding of education just as a national policy analysis does. What matters is not scale but care: a problem worth pursuing, questions worth answering, and a design equal to them.

So, take the concern that first brought you to this book. Give it a name, ask what you most need to find out, and begin. The chapters are behind you; the study is ahead of you. And now it is your turn.

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