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The aims and claims of educational research

Abstract:

The aims of empirical educational research are diverse and range from description, explanation, prediction and prescription, through understanding, interpretation and critique, to change, subversion, displacement and disruption. The pursuit of each of these aims involves philosophical and practical difficulties, with implications for the various ways in which researchers may seek to warrant their claims. However, these difficulties need not discourage researchers from aspiring towards coherence of their aims, warrants and claims. An important role for philosophy in relation to empirical educational research is to create a reflective space in which to explore the reasons and conditions shaping research practice.

Introduction

...(two introductory paragraphs omitted)...

'It is easy', Pring (2015: 208) notes, 'to stipulate a straightforward statement of aims, broken down with a finite range of measurable objectives or targets. It is relatively easy then to identify the means which, empirically, can be shown to attend these targets....But the more philosophically minded have doubts'. Pring's point is about the substance of research and the political use of its results to shape practice, but it could equally be applied to issues of design and methodology and more widely to the politics of research. Fortunately, as I hope to show in this chapter, once research practice is subjected to reflection and scrutiny, a statement of aims for research that are purely instrumentally connected to objectives, targets and means is neither straightforward to stipulate, nor easy to defend.

Empirical educational research is conducted in pursuit of a variety of aims, from description, explanation, prediction and prescription, through understanding, interpretation and critique, to change, subversion, displacement and disruption. Researchers often make their aims explicit and seek to warrant their claims in ways that are consistent with the overall drive of a project. The following selection of excerpts from papers in a variety of sub-fields of research in education illustrates this point (*my emphasis throughout*):

- A. "The trans-contextual model (TCM) is an integrated model of motivation that **aims to explain** the processes by which agentic support for autonomous motivation in physical education promotes autonomous motivation and physical activity in a leisure-time context. (...) Aims: The purpose of the present study was to incorporate the constructs of basic psychological need satisfaction in the TCM **to provide a more comprehensive explanation** of motivation." (Barkoukis, Hagger, Lambropoulos and Tsorbatzoudis, 2010)
- B. "The aim of this study is **to examine** the factors that influence higher education students' intention to use technology. (...) A sample of 314 university students were surveyed on

their responses to seven constructs hypothesized **to explain** their intention to use technology.” (Teo and Zhou, 2004)

- C. “This paper aims **to explain and analyse** the development of pedagogical understanding among student-teachers in an initial teacher education programme. (...) The findings from the three selected cases **provide an explanation** for (...) individual differences in pedagogical understanding” (Cheng, Tang and Cheng, 2014)
- D. “The aim of this study is **to understand** young people's evaluations of the severity of the two distinguishable bases for being bullied (...). A group-interview methodology was used **to elicit** young people's appraisals of the two different bases for being bullied”. (O'Brien, 2007)
- E. “The aim of this paper is **to develop a model to guide** dialogue and cooperation between staff members within formal and informal educational contexts, in order to foster this integration. (...) We argue that this model can **help educators**, engaged in formal and informal learning, to develop practical and productive partnerships with each other.” (Fallik, Rosenfeld & Eylon, 2013)
- F. “In this article, the authors aim **to raise critical questions** about the appropriateness of My School and NAPLAN by arguing that they arise more from a framework of normalized neoliberal assumptions that model public goods on market transactions, than from any evidence that they actually provide mechanisms to foster better education” (Redden and Low, 2012).
- G. “The aim of this article is **to investigate** how self-study can help me to understand the complex and context-based situations of my practice. I draw on the work of other teacher educators **to examine** the potential of self-study **to improve my practice**. Through this exploration I have begun **to transform** the way that I comprehend teaching and learning in teacher education.” (Alderton, 2008)
- H. “Secondary school students were interviewed **to investigate** how they speak about gender expression, performance and fluidity in their school. (...) My aim is **to draw attention** to the need **to de-naturalize** the notion of a gender binary. (...) The educational significance lies in the need **to disrupt** the heteronormative education system **to resist** the exclusion of gender non-conforming students.” (Ingrey, 2013).

Yet, as evidenced by the cyclical debates about the quality of educational research, it is not always the case that the aims of research are stated explicitly and that their relationship to the methods used and the claims made is appraised critically in the reporting of empirical research. In some reports, the aim is stated only generically, for example as ‘to gain knowledge about x’. Others stop at the level of procedures, describing the steps taken in a study (‘to survey’, ‘to test the hypothesis *h* through intervention *i*’) and its generic approach (the firm cover-all favourite must be ‘to explore *x* and *y*’), rather than anticipating the outcomes and the nature of the claims to be made on the basis of the evidence so gathered. The lack of clarity about the aims of a study in research reports often hinders the readers’ ability to judge its quality and relevance.

An intention of this chapter is to remind readers not only that the pursuit of each of the aims noted above is fraught with philosophical and practical difficulties, but also that the articulation and discussion of these difficulties are far from common practice in the reporting of empirical research, and that this may be one source of the disputes about its quality, trustworthiness and relevance. Another intention is to suggest that these difficulties need not discourage researchers from aspiring towards coherence of their aims, warrants and claims. The discussion will engage with arguments from Pring (2015; 2012; 2007) and Oancea and Pring (2008).

Aims, research questions and claims of research

Oancea and Pring (2008), following Stenhouse (1975), define research as “the systematic gathering of evidence (...), or indeed (as in philosophical research) the systematic analysis of the conceptual framework within which that evidence is gathered, with a view to answering certain questions” (p. 23) and in ways that are open to criticism. Any answers generated are subject to constant challenge and refinement. Empirical research questions arise from initial states of epistemic perplexity, puzzlement, doubt or wonder, but also from practical problems and normative conflicts, as well as from existential experiences such as repression, despair or anxiety. In other words, as I have argued elsewhere (Oancea, 2011), they arise from the same “source experiences” as philosophical inquiry; but this insight is often lost as empirical (i.e. based on *a posteriori* collection of evidence) and philosophical-conceptual (i.e. through *a priori* argumentation) inquiry are prised apart in research training, planning, conduct, reporting, and assessment.

The point of research questions is to focus the mind on the relationships between the aims of a study and the realities being studied, and thus to guide the practical choices made in research. In doing so, particular questions open some possibilities but temporarily close others. This is a productive characteristic, as by definition research questions need to be researchable, empirically (such as “What is the relationship between parents’ joint income and children’s achievement at age 18?”) or otherwise (“What knowledge do teachers need to act professionally?”). This chapter concentrates in particular on questions which, while they may articulate with questions that invite other forms of inquiry, largely prompt the gathering of empirical evidence.

Although what counts as ‘researchable’ is open to debate, a minimum requirement seems to be that research questions are able to prompt and propel inquiry and argument in ways that further the broader aims of a project. If research is a form of rational practice, it seems sensible to expect that the claims made on the grounds of the evidence gathered and interpreted in a study need to relate back to the questions asked and to the levels at which they were pitched – thus to the aims behind them. If ‘data’ are evidence, they would be evidence of something and for something: data collection is not a means separate from the ends of research, but part of the *praxis* of research, whereby the aims are expressed and challenged in action.

Excerpts A-H above illustrate some of the different ways in which research reports may make reference to the aims guiding the study reported. These aims, and some of their associated cues for research questions, include:

- Description: what, when, where, who, how...?
- Explanation: why did it happen?
- Prediction: what is to be expected?
- Understanding: how is it grasped in human experience?
- Interpretation: what does it mean?
- Prescription: how ought it be?
- Positive change and emancipation: how can it be transformed for the better?
- Critique, displacement and disruption: how is it constructed? What are the limitations and hidden assumptions? How can it be challenged?

Other aims may, of course, be conceived of, but often they tend to be either too vague (e.g. 'exploration', 'evaluation', 'examination', 'investigation', 'analysis') or much narrower, and thus secondary to the above (e.g. 'comparison', 'mapping', 'identification', 'demonstration', 'classification', 'illustration', or 'questioning').

A further complication arises from the fact that the above terminology is not used consistently in research writing. For example, excerpts A-C all have in common explanatory aims; but different senses of "explanation" underpin these aims. An explanation may be a strategy for justifying knowledge through making explicit the laws, conditions, and causes relevant to an event or state of affairs, but it can also be couched in terms of relationships, probabilities, functions, aims, practical reasons, and trends. It can take the form of a deductive-nomothetic syllogism or of an inductive-probabilistic inference (see Excerpts A and B), but also that of an abductive inference (Peirce, 1934), retroduction (Glynos and Howarth, 2007), or practical inference (see Excerpt C). What connects these cases, regardless of the direction of reasoning, is a substantive relationship between a state of affairs, event, presence or absence (*explanandum* – what is being explained) and a basis for explanation (*explanans* – antecedents, states of affairs, events, variables), via a set of rules, provisions or conditions of validity (such as general covering laws, probability hypotheses, or even reasonable expectations). What doesn't connect them is a blanket simplification of complex relationships, usually implied in the accusations of "narrow positivism" commonly directed at research driven by explanatory aims.

"Understanding" and "interpretation" are also popular in statements of aims (see Excerpt D). They can be used in a generic sense (e.g. "to offer an explanation in order to further understanding"), but often are used to suggest that social life cannot be fully explained in terms of (causal) generalisations, and that humans are situated beings, which is both a limiting condition and a source of possibilities. Many so-called interpretivist approaches to research are underpinned by nuanced discussions of consciousness, intentionality, reason, communication and experience. These discussions may draw on diverse philosophical and theoretical positions and may proceed variously through rich description of particulars, introspection, illumination, decoding, conversation, story-telling, or practical reflection. The painstaking exploration of lived experience, subjective meanings and cultural milieux can be an aim in its own right, which may be connected, though not necessarily, with more action-oriented and counter-hegemonic research agendas.

Research aimed at positive change and emancipation builds on the interpretive insight that there is no "neutral", perspective-free description. It questions critically the understanding and self-understanding of researchers and the assumptions behind the production of empirical research knowledge. The intention is, however not only to explain or illuminate, but to develop strategic action (Excerpt E), critique (Excerpt F) and moral practice (Excerpt G) directed towards overcoming "constraints on rational change" (Carr and Kemmis, 1986: 150). In this sense, the pursuit of univocal meanings and accurate descriptors is problematic; instead, "catalytic validity" (Lather, 1986; Brown and Tandom, 1978), or the capacity to stimulate democratic action that empowers individuals, takes priority.

Subversion, displacement and disruption (Excerpt H), as aims for research, stem from the view that stories – including scientific ones – are plural and can only be told from subjective positions, and that language helps constitute, rather than purely represent, social reality. As critical research tells us, all texts encode and conceal conflicts between different voices, authorial investments, value positions, and assumptions about how they may be understood. In “postpositivist” (be it critical, poststructuralist, or postmodernist) mood, data, fixed meanings, objectivity, discursive ‘innocence’ (Lather, 1986; 1992) and grand generalisations are regarded with suspicion. Thus, subversion and disruption work against themselves as aims of research, cancelling out the possibility of reporting ‘findings’ that consist of totalising claims and positive outcomes.

As hinted through the above discussion, the aims of educational research and of the social sciences and the humanities more widely are surrounded by disputes couched in philosophical terms. While the aims pursued by different modes of research may be consonant with the views on knowledge and science put forward by particular traditions, such as those outlined above, the marriage is not a perfect match. Some of these disputes stem from contrasting views on the nature of research. In the widest sense, research is a form of practice that arises from the general human impulse to cultivate and exercise the distinctively human capacity for critical thinking and reflection (Nussbaum, 2010). In a narrower sense, research is the specialized activity, framed for practical and political purposes, of trained communities of experts who aim to further or challenge particular ways of seeing and approaching the world. There are risks in both perspectives: research as generic endeavor may be open to methodological diversity but may struggle with conceptual confusion; while research as specialized paradigmatic activity may cultivate conceptual clarity, for example through tight operational definitions, but may risk falling into stalemates of methodological purism.

Philosophical affinities and the politics of empirical research

The textbook account of diversity in research is constructed around the notion of ‘paradigm’. A lot more is invested in this term than was covered by the notion of exemplary procedures that was part of Kuhn’s (1970) use of the term. Paradigms, Guba and Lincoln (1994) inform us, combine particular philosophical (largely, epistemological and ontological) beliefs with methodological preferences and, some would add, with sociological patterns of research organization. The resulting combinations may be described as ‘worldviews’ or ‘basic belief systems’ that are incompatible with each other – or incommensurable, to return to Kuhn’s (1970) terminology – but this attribute is not logically or practically necessary. Through this emphasis on paradigms, research students are socialised into framing empirical research through reference to several traditions of philosophical inquiry. On occasion, the references used in discussions about empirical research are thoughtful outcomes of study and reflection, intended to open further debate. In other cases, they operate as little more than mechanisms of legitimation, with philosophical references adding a gloss of authoritativeness and scholarliness to otherwise under-theorised reports from data gathering exercises. Paul Standish illustrates this point with examples of how research methods courses may induct students into “domesticated” critique,

“methodological pieties”, theoretical “creeds”, superficial “acknowledgement of positionality”, and “deferential citation” (Standish, 2007: 338).

Many methods textbooks and research training courses begin with a discussion of ‘positivist’ research. Positivist research is often painted in very broad brushstrokes, as a largely obsolete paradigm lacking both nuance and real-life depth. The positivist emphasis on the systematic production and verification of explanations of what is clear, factual and open to observation is cast as undue simplification. The search for general empirical laws is feared to lead to dangerous expectations of social engineering; while the positivist aspiration to the unity of scientific method amidst the diversity of subject matter, and the view of the natural sciences as an ideal of research to be emulated by other disciplines, are seen as threats to the disciplinary and methodological specificity of the social sciences, and in particular as a reductionist prioritising of the use of quantitative over qualitative data.

Although positivism is often described in such textbooks as a homogenous position, few researchers identify themselves as such. This is why, in his “philosophical map” of “the cultural and philosophical background against which research is conducted” in education, Pring (2015: 109-111) speaks of a “positivist spirit and agenda”, rather than a paradigm or a research denomination. The aims of research carried out in this spirit encompass factually accurate description, logically sound explanation (largely causal, quasi-causal and probabilistic), and rational prediction.

Turning references to positive philosophy and to longer-standing empiricist traditions (from Locke, Hume, Bacon, to Comte, the Vienna Circle, or Ayer) into the barebones of a research ‘paradigm’ is in itself a simplifying exercise, and one with political consequences. As research funding priorities, nationally and internationally, have turned towards large-scale, longitudinal or intervention-based research (such as Randomised Control Trials) and towards systematic syntheses of quantitative findings, accusations of narrow positivism have been mobilised to back up the case for a more heterogeneous and open research landscape (Hammersley, 1997, MacLure, 2005). A side outcome of these mutual criticisms has been increased awareness about the limits of each mode of research, leading to arguments in favour of using them complementarily, and thus to the growing popularity of ‘mixed-method’ research designs.

Proponents of mixed-method research (see Tashakkori and Teddlie, 2010, Creswell and Plano-Clark, 2011) signal a departure from the aspirations to the methodological unity of science, in favour of plural, non-hierarchical perspectives on the different modes and communities of inquiry. The notion of mixing means to fit research purposes is sometimes traced to pragmatic philosophy (largely James and Dewey); according to Biddle and Schafft (2014: 3-4, 7), “pragmatism is, by most counts, one of the most commonly used philosophical frameworks, and is often identified as such in textbooks and foundational articles in the field” of mixed-methods research, as well as being “central to the instruction of new mixed methods researchers”. The procedures through which “warranted assertions” (Dewey, 1941) are generated and the practical implications of research outcomes are followed may work as both tests of knowledge and levers of change (see Greene, 2008; Biesta, 2010). Theories are useful tools in this enterprise, rather than aims in their own right. However, as Biesta (2010) suggests,

these references to pragmatism stop short of offering a ‘paradigm’ for mixed methods research. The “everyday pragmatism” of choosing research means that befit the research ends does not amount to “a paradigmatic underpinning or wholesale justification of mixed methods research” (p. 97). Again, philosophically-inclined argumentation may be mixed with research politics, as claims to relevance and practical outlook play into policy demands for research that demonstrates, prescribes and applies ‘what works’ in practical situations (Oancea and Pring, 2008).

Indeed, research carried out in the spirit described above would seem to fit well with current expectations in research policy. In contrast, other types of research still face a double credibility challenge: on the one hand, in persuading funders and policymakers that they can offer value and rigour that add to, or improve on, research framed in positive or pragmatic terms; and on the other hand, in creating for themselves niches of academic recognition that enable sustained growth. Thus, a range of largely qualitatively or theoretically driven approaches have attempted explicitly to set out the limitations of causal explanations, aggregate measures, and problem-solving research, while emphasising the value of developing historically conditioned understandings and interpretations of singular personal experience, subjective and intersubjective meanings, and cultural lifeways. These traditions resist methodological monism and the ideal of exact natural science. They replace aspirations for deductive science with beliefs in the power of reflection on particular situations and construction of accounts of lived experience (such as in phenomenological inquiry) and cultural variation (such as in ethnographic inquiry). They hold that the interpretation of subjective experience and of cultural norms is iterative, linguistically mediated through conversations, and intentional. In education, some of the more formalised variants of interpretive research, such as ‘grounded theory’ (Glasser and Strauss, 1967) or ‘phenomenography’ (Marton, 1986) are often legitimated through reference to hermeneutic, existential and phenomenological philosophy (Dilthey, Collingwood, Gadamer, Sartre, Husserl, Heidegger, Levinas, Merleau-Ponty). Their aims are usually stated in terms of exploration, understanding and interpretation; description also features, but the qualifiers for it change. Rather than seeking accuracy through conventional validity and reliability checks, researchers aim for ‘rich’ or ‘thick’ description (Geertz, 1973, following Ryle), for attentive insight, in-depth understanding, imaginative interpretation, or intelligible accounts. As their articulation of the aims of research shifts, so does their view of research processes and quality.

Pring’s (2015) “philosophical map” surveys the main features, criticisms and philosophical implications of positivist and interpretivist (phenomenological and ethnographic) perspectives on research in education, as well as the challenges to these traditions from postmodern sensibilities. One tradition of research largely missing from this review is that of critical theory. In critical research, the aims of inquiry often clash with the aims of the social interactions of which it is a part. Drawing on Hegel and on a Marxist philosophical tradition that emphasises participatory change and critique of ideology over detached interpretation and theorisation, critical research challenges further some of the modernist assumptions of positivism, for example through showing how social reality may be created through discourse. At the same time, critical theorists pursue an ideal of emancipation through rational action subjected to community checks and argue for the role of undistorted

communication in achieving it. Critical researchers may reference the Frankfurt School and Habermas, as well as critical race theory (Bell, Delgado, Ladson-Billings), feminism (Harding, Haraway, Braidotti, Gilligan, Noddings), or critical pedagogy (Giroux, Freire) to point out that “knowledge” is socially constructed and does not equate “science”; that scientific methodology itself is a form of practice which is value-laden and discursively constructed; and that the sociopolitical significance of educational actions (aims as well as means, agents as well as relationships) is central to educational research. Such propositions have introduced further responses to the public landscape for education research, ranging from the notion of the researcher as a critical agent (Carr and Kemmis, 1986) to the development of a wide range of forms of critically engaged action research.

Other postpositivist frames for research share some of the critical agenda, including the sense of responsibility for research knowledge and action, but attempt to break from critical theorists’ rationalist and emancipatory aspirations. Poststructuralists draw on literary studies and philosophical sources such as Derrida, Foucault, Barthes, Deleuze, Butler, Baudrillard, Kristeva or Irigaray in their attempt to open up readings of ‘texts’ (from everyday texts, through media, policy, literature, and to practices, artefacts, body language, or organization of space) that reveal the arbitrary impositions of meaning (subjugation) and the hierarchies of power or meta-narratives inherent in textual construction. The notion of research ‘aim’ itself is problematised in these traditions: if the author as source of intent and meaning is a construct, and the reader takes centre stage, then the aims and meanings of research themselves are subject to deconstruction and multiple interpretations. Poststructuralism has much in common with postmodern writing in their radical responses to ‘modernist’ cultural traditions, and in particular to what they see as totalising aspirations for reasoned action in the light of an accumulation of tested and sanctioned knowledge. But postmodern responses go further. The ‘postmodern condition’ resists “grand narratives” for the justification of knowledge and legitimation of values and aims (Lyotard). Reason itself is socially constructed; human interactions are constituted through power relations; and language is indeterminate and unable to capture radical difference (Burbules, in Siegel 2009: 531). Rupture, openness, and folds become metaphors for new and fluid ways of engaging in research, while instability and destabilisation become conditions of research, rather than boundaries to push against.

The above excursion through different attempts to ground empirical research in philosophical traditions shows a variety of articulations of possible aims for research. These diverse ways of framing and articulating the aims of research raise questions about the common dualist view of research which opposes nomothetic/ causalist and non-teleological (or ‘Galilean’ – von Wright, 1971) to idiographic/actionalist and teleological (or ‘Aristotelian’) views of inquiry. Traditionally, this is the opposition between “Erklären” and “Verstehen” – between explanation and understanding as aims of research - , which, from Droysen and Dilthey onwards, has been used to contrast the natural to the social sciences. The trouble with this neat separation is that the exact sciences, some technical and professional fields, great swathes of social research, as well as the arts and much of the humanities sit uneasily across this divide.

Why aims are not straightforward

Research questions propel inquiry in different ways and at different levels, as framed by the broader aims of a research project (e.g. descriptive, explanatory, interpretive, emancipatory). Some research textbooks and guidance imply that research questions operationalise these aims in ways that minimize both the variability of interpretations and value 'bias' – that is, in ways that are neutral both epistemologically and axiologically. A consequence of this assumption is the attempt to adjudicate rival claims to truth and value without taking into account the context in which they were produced. Maxwell (2004) uses the example of the influential US National Research Council (2002) report to challenge the classification of education research questions 'into three (interrelated) types: description—What is happening? cause—Is there a systematic effect? and process or mechanism—Why or how is it happening?' (NRC, 2002: 99). He argues that the report's notion of causal explanation as a question of "whether", rather than "how", x causes y , neglects both the role of context, and the importance of meaning in explaining causality.

Occasionally, textbooks provide tables and checklists of 'philosophical assumptions', with which the students are invited to judge their alignment (or otherwise). This strategy both complicates the formulation of research questions, and reduces philosophical engagement with research to a preparatory exercise, to be completed at the start of a project. As a result, the temptation to write a brief section of the so-called 'methodology chapter' summarizing these early thoughts, and to leave it at that, may prove impossible to resist.

The design and provision of research training that works on the basis of reductionist understandings of research aims soon hits multiple problems.

First, actual empirical research may pursue more than one aim. These aims may support each other; for example, aiming to describe the components of a system, and to explain the relationships between them; or to understand the motivations of a group, in order to support their political action. But they may also seem in conflict; contrast, for example, aiming to recommend a technical course of action for a particular situation, versus aiming to unveil the power relationships and inherent inequities that may constitute it.

Second, even the most reflectively written empirical research reports often have little space for in-depth discussion of the philosophical conundrums underpinning their subject matter and methodologies, or of the processes through which a compromise may have been reached on the particular approach adopted. There is no road map from research methods and exposition of findings to the philosophical "struggles" (Pring, 2015) and deliberations built into them, and to the philosophical traditions that may help make sense of them. Indeed, that relationship is often at best implicit.

Third, the ways in which the aims may be defined in everyday research language vary. For example, 'explanation' may designate formal deductive procedures for connecting antecedent conditions to particular outcomes in the light of law-like regularities or probability hypotheses. But equally it may be used to designate more informal, inductive explorations of people's reasons and motivations for action. Similarly,

'description' may indicate both the precise indexing of objects and of their properties and relationships using a formal set of mutually exclusive definitions, and the detailed re-telling of first-hand accounts of experience.

Fourth, each aim may be translated in different ways into research questions. A dose of artificiality is introduced in this process, as assumptions are made about either the complementarity or the hierarchical progression of several questions towards covering the conceptual and substantive ground of an aim and a research topic.

Fifth, in the reality of research practice the aims of research are not static; they may have been encoded in grant or commissioning letters, but are constantly reassessed and calibrated as a research project progresses. And sixth, the relationship between the epistemic and normative claims made in a study and its original aims is mediated through discursive and procedural factors that complicate the assessment of consistency and success.

The aims of research, including educational research, are, thus, not straightforward. Their discussion in relation to any particular empirical research project needs to address not only issues of consistency across the design, conduct and reporting of the project, but also the peculiar complications arising from the way in which the relationship between the aims pursued and the claims made is described. For example, if a project claims to have produced an accurate *description* of P as using the descriptors d_1 , d_2 , and d_3 , a host of questions arise: on what grounds are these descriptors deemed appropriate? How well do they describe P? How has accuracy been judged? What alternative descriptors have been discarded (and why)? What are the implications of these choices? Who is the describer? How does the describer shape the choice and use of descriptors? etc. Similarly, claims to have identified *explanatory* factors raise questions about the view of the goals and functioning of social research that underpins the chosen model of explanation, but also: how was the definition of what was to be explained arrived at? What was included and what was left out of both explanans and explanandum? What assumptions are being made about other factors? How are these choices justified in this particular case? If *prediction* is an aim, then how is it justified? What are the grounds for it? How confident can we be? Who is to use these predictions and who takes responsibility? If *prescriptive* aims lead to normative claims, whose perspectives have been taken into account? Who sets the standards? Who takes responsibility for the consequences? Critical and deconstructive aims are also subject to questioning. If *change*, *subversion* or *disruption* of the status quo is deemed worthwhile, why is change important given the situation? What is the nature of the change? How does research contribute to bringing about change? Who are the agents of change? Whose agenda is being enacted? What is taken for granted? What is being simplified?

Grappling with such questions is not an easy task, but is a necessary step towards a more sustained effort to think philosophically in research. In the light of these questions, inquiry builds on the pre-reflective experience of research practice, but situates itself in a reflective space constituted through engagement with philosophical traditions.

Conclusion: philosophy as reflective space

In educational research training as well as in public discussions about the relative value of different modes of research, the aims of inquiry are often framed dualistically. Broad distinctions between nomothetic and idiographic, modern and postmodern, positive and interpretive research are brought to bear upon more technically defined contrasts between, for example, quantitative and qualitative research. The debates around these dualisms polarize around contrasting political choices, such as that between funding policies that incentivize and reward research diversity, and those that favour models of research seen as more likely to reduce uncertainty in decision making. In line with Pring's (2015: 137) argument that such dualisms can be deceptive – or 'bewitching', to use Wittgenstein's word (1953: §109) – I suggested in this chapter that education research pursues a variety of overlapping or complementary aims. Although the ways in which these aims are articulated may change with fashions in research reporting, there seems to be basic acceptance across research communities that their diversity is worth the while (though admittedly this acceptance is not always reflected in patterns of funding and popularity).

The discussion in this chapter also suggests that there is space not only for the *a priori* analysis of reasonable aims of inquiry in the light of insights about knowledge and actions stemming from different philosophical traditions, but also for empirical investigation of the ways in which plausible and feasible aims are defined and pursued across the range of actual research projects. Different philosophical perspectives can illuminate each of the aims discussed above, as well as help interrogate them. In particular, they can encourage the scrutiny of the relationships between the aims pursued in a project, the research questions posed, the design and methods chosen, and the extension and intension (that is, both the social realities referenced, and the expressive relationship between claims and these realities) of the epistemic and normative claims made on the basis of the evidence gathered.

An important role for philosophy in relation to empirical educational research is, thus, to create a reflective space within which to explore the reasons and conditions shaping research practice and to support researchers in their deliberation about their practice and about its internal and external goods. This space for reflection enables articulation and contestation of the fluid connections between: beliefs about the nature and trustworthiness of research knowledge and action; perspectives on the nature of the social practices it explores, constructs, deconstructs and reconstructs; and conceptions of the good, right or virtuous in these practices. Such a role for philosophy of research is made even more salient by continued pressures for the accumulation, integration and effectiveness of educational research knowledge.

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