

Educational Research Literacy: Philosophical Foundations and Empirical Applications

Kim Pedersen Phillips¹, Andreas Eriksen², & Sølvi
Mausethagen³

1. Inland Norway University of Applied Sciences, Norway.
2. Oslo Metropolitan University, Norway.
3. Oslo Metropolitan University, Norway.

Contact: Kim Pedersen Phillips, Inland Norway University of Applied Sciences, Norway.
kim.phillips.pedersen@gmail.com

Abstract

The paper offers a novel philosophical perspective on how research literacy should be conceptualised in the educational domain. Standard accounts of teacher research literacy consider it merely a subset of the skills of an educational researcher. Therefore, the accounts largely ignore the need to anchor or embed the mode of engagement with research in the particular demands of the professional role. By contrast, we argue that a virtue-based account of the epistemic agency involved in receiving testimony can help deliver a normatively attractive and empirically plausible account that is tailored to the role. We support the account with an original in-depth analysis of actual teacher engagement with research.

Keywords

Research literacy, educational research, teacher professionalism, evidence-based practice in education, research use in education

1. Introduction

Teachers today are expected to use educational research in their professional practice. Such expectations—which remain contested due to worries about de-professionalisation and loss of autonomy, among other considerations—come from various actors, not least policymakers and researchers. They often centre around the argument that decisions made at the planning stage of teaching or in the classroom should be based not merely on personal intuition, experience, or tradition, but also—or instead—on the findings of research into educational practice.

Clearly, though, the mere use of research itself is not sufficient for good practice: the research in question must be of sufficient quality, it must be up to date, and it must be relevant to the situation in which the teachers find themselves. Moreover, the research must be judiciously applied, in line with ethical demands and role obligations. It needs to be integrated with other knowledge resources, including relational and experience-based knowledge.

If research is to be integrated into teachers' practice and lead to its improvement, teachers must be able to identify knowledge needs, access scientific findings, understand those findings, tell whether a given finding is relevant to their practice, and in what way, to reliably assess relevant findings for quality, and to see how such findings relate to a broad range of ethical and practical considerations. Let's term this cluster of abilities *research literacy*. A teacher who possesses the cluster is *research literate*. The notion of research literacy has gained traction in recent literature, and it is increasingly seen as a core element of teachers' professional practice.¹ It promises, among other things, to help elucidate, and in turn, help strengthen, the tenuous relationship between educational theory and educational practice. To develop research-literate teachers is seen as a central aim of much contemporary teacher education. To provide an account of research literacy is therefore important for several reasons.

This paper offers a novel philosophical perspective on how research literacy should be conceptualised in the educational domain. The standard approach to teacher research literacy considers it a subset of the skills of an educational researcher, and takes it to involve a grasp of scientific content which mirrors that of researchers. However, as we will explain, this approach places overly demanding conditions on research literacy, and it largely ignores the need to anchor the mode of engagement with research in the particular demands of the professional role of teachers. We offer an account of research literacy that avoids these shortcomings. We look at empirical investigations into how teachers in fact engage with research in order to flesh out what research literacy amounts to. Drawing on Miranda Fricker's influential virtue-theoretic account of the agency involved in acquiring knowledge from the word

¹ See e.g. (Boyd, 2022; Evans et al., 2017; Groß Ophoff et al., 2017) and the contributions in (Boyd et al., 2022)).

of others (2007) and bringing her account into touch with recent work on professional research literacy (Eriksen, 2022), we then argue that research literacy must be understood as a role-specific virtue: it is a stable disposition to think and act well with respect to educational research, in accordance with the particular ethical and epistemic demands of the teacher role.² We spell out in detail what this amounts to, and support the account with an original in-depth analysis of actual teacher engagement with research.

We begin in section 2 by sketching two broad approaches to educational research literacy. Section 3 provides an overview of empirical work on how teachers in fact use research, and offers a critique of the standard approach to research literacy. Section 4 outlines an account of teachers' research literacy. Section 5 illustrates the account by applying it to a set of cases. Section 6 briefly concludes.

2. Two broad conceptions of teachers' research literacy

What must teachers understand about educational research in order to be research literate? One possible and quite common answer is that teachers' understanding should approximate educational researchers' understanding as far as possible. Like researchers, teachers must understand a range of scientific concepts and theories, be familiar with a range of research methods, and know a range of scientific findings. According to this view, teachers' understanding of research is a subset of what researchers themselves understand of their field of expertise. At a certain threshold of understanding, where the level of understanding is close to that of an educational researcher, the teacher is considered research literate. It is then assumed that, given this level of understanding, teachers will be able to understand and critically assess the results of educational research and put it to use in their teaching practice. We can call this broad family of views the *scientific content* approach to research literacy: research literacy is a matter of grasping scientific content.³ This sort of approach is widespread.⁴ The approach goes hand in hand with a natural proposal as to how to promote research literacy in teachers: present a range of educational theories, concepts, methods, and facts, so as to "fill the knowledge vacuum" (cf. Miller 2001, p. 116) of the teacher.

In contrast, what we call the *practical* approach rejects the idea that what teachers need to know about research to be research literate is a subset of what expert researchers know. This approach highlights the fact that teachers' engagement with research is intimately bound up with teaching practice, and that teaching practice is governed by norms and standards that are distinct from those that govern research. This requires teachers to employ knowledge and

² Although we believe our account can be applied to the case of higher education teachers, we will focus on primary and secondary education teachers in this paper.

³ The term is borrowed from a broader debate about public understanding of science (Keren, 2018).

⁴ As Korthagen & Kessels note (1999) using different terms, it has been the traditional approach in teacher education for most of the 20th century. The approach is also suggested by recent definitions of research literacy, e.g. (BERA, 2014).

forms of reasoning that diverge from those that researchers use in their respective engagement with educational research. Naturally, the practical approach does not claim that *no* understanding of scientific content is required for research literacy; there must be some overlap between teachers' and researchers' understanding. But the former is not a *subset* of the latter. The approach thus makes a different proposal as to how to promote research literacy: it should not only involve presenting scientific content but must also involve promoting the particular forms of research-related reasoning that are demanded by teaching practice. It is not merely about filling a scientific knowledge vacuum. Becoming more research literate is not a matter of becoming more like an expert educational researcher, on this view.

In this paper, we defend a version of the practical approach. The need for such an approach becomes apparent once one looks at how teachers in fact engage with research: they do not approach the issues that arise in their work like a researcher, but in a way that is bound up with the normative structure of their role and their specific practical context. After looking at a broader debate concerning science literacy, we turn to a discussion of the ways in which teachers engage with research.

3. Teachers' engagement with research

3.1. Marginal insiders and competent outsiders

The clash between scientific content approaches and practical approaches to educational research literacy mirrors a broader debate concerning the science literacy of laypersons. In his influential 2011 paper, Noah Feinstein argues that traditional approaches to science literacy—which hold that science literacy is a matter of possessing knowledge of scientific facts and theories and grasping scientific concepts—give rise to science education which produces what he calls *marginal insiders*: “These are students who have sat through a long parade of concepts and theories [...]. Their understanding of science is fairly primitive [...] this glimpse is all they get” (Feinstein, 2011, p. 784).

But as Feinstein notes, there is scant evidence that becoming a marginal insider will lead to the actual use of science or competence with respect to science-related decisions in everyday life—rather, such usefulness is simply assumed without empirical support (Feinstein, 2011, p. 169). Instead, he suggests, we should replace traditional approaches to science literacy with observations concerning how people actually use science in everyday life and build (up) an account of science literacy from there. The aim of science education based on this approach is to produce *competent outsiders*: “people who have learned to recognise the moments when science has some bearing on their needs and interests and to interact with sources of scientific expertise in ways that help them achieve their own goals” (Feinstein, 2011, p. 180). As he notes, empirical research on how laypersons engage with science reveals that:

people selectively integrate scientific ideas with other sources of meaning, connecting those ideas with their lived experience to draw conclusions and make decisions that

are personally and socially meaningful [...]. People do not engage with science by removing themselves from their own social contexts and asking, “what would a scientist do?” They do not, for the most part, seek to become scientific insiders. They remain anchored outside of science, reaching in for bits and pieces that enrich their understanding of their own lives. (Feinstein, 2011, p. 180)

Unlike the traditional approach, he argues, this approach can yield people who will in fact use science in making decisions in their everyday lives. These are genuinely science-literate people.

These points from the broader debate concerning science literacy can help us conceptualise the clash between scientific content and practical approaches to educational research literacy. Practical approaches claim that a similar situation to that concerning science literacy holds for educational research literacy: the traditional scientific content approach gives rise to teacher education which produces marginal insiders with respect to educational research. Such teacher students have “sat through a long parade” of educational theories and concepts, without much grasp of how these relate to their everyday life as teachers. Scientific content approaches simply assume that being a marginal insider will lead to being a competent critical assessor and user of research. But, the practical approach claims, this assumption is not correct. Rather, they claim, we should conceive of research-literate teachers as competent outsiders with respect to science:⁵ teachers remain anchored outside of science, in their particular practical domain—governed as it is by a set of particular practical, epistemic, and moral norms—and “reach in for bits and pieces” that will enrich their teaching practice. Teachers do not ask themselves, “What would an educational researcher do?” in making decisions but rely on a range of capacities particular to the teacher role, which are wholly unlike those used by researchers in their domain. Educational research literacy, then, is not a matter of imitating researchers’ understanding of educational research but is rather a matter of being competent at engaging with research in a manner appropriate for the teacher’s practical frame of deliberation.

In the next section, we suggest that these claims concerning teachers’ use of research are borne out by empirical research into these matters and that this goes some way towards vindicating a practical approach, which we will go on to develop in section 4 and 5.

3.2. Paving the way for a practical approach

How do teachers in fact engage with educational research? There is a growing body of work investigating this question (for an overview, see Joram et al., 2020, pp. 1–2; Levin, 2013), and

⁵ Teachers’ relation to educational research is closer than that of laypersons’ relation to science. ‘Competent outsider’ as applied to teachers must be read with this in mind.

while there is much work still to be done in this area, there is widespread agreement on several points:

- (a) Teachers often do not use research at all, or to a limited extent, even while possessing some theoretical grasp of educational science (e.g. Cain, 2016; Borg, 2009).
- (b) Both teachers and teacher students frequently struggle to see the relationship between research-based educational theories and professional practice (e.g. Canrinus et al., 2017), where this may lead teachers to ignore research. Teachers find communicated research overly theoretical, and as Bartels 2003, suggests, “teachers may ignore research findings because they are typically presented in the form of a ‘researcher discourse’ which fails to resonate with the ‘teacher discourse’ of practitioners” (Joram et al., 2020, p. 2).
- (c) Where teachers do use research, they typically use it only under specific conditions, when it is perceived as highly pertinent to their immediate practical context, and when particular issues arise in that context (Drill et al., 2013), and/or in relation to the implementation of specific research-based interventions.
- (d) Teachers assess claims made by educational research very differently than researchers do, with an eye toward integration into the practical domain (e.g. Joram et al., 2020). In a study of public school teachers’ use of research, for example, Drill et al. find that “teachers use a different set of criteria to evaluate high-quality research than researchers. They want research that is worth their time, attention and leads to possible change in practice. Researchers, on the other hand, are trained to judge quality based on key criteria such as internal validity, rigour of analysis, strong methodological design, triangulation of data and appropriate measurement” (Drill et al., 2013, p. 11). Teachers’ critical assessment of research thus is not simply a matter of possessing a grasp of scientific content and employing it in a disinterested manner.
- (e) Teachers typically integrate research-based knowledge with other kinds of knowledge, including relational, experiential, and moral knowledge (e.g. Mausethagen et al., 2018).
- (f) Teachers’ use of research is a social phenomenon, in that it takes place in an institutional context with numerous actors, and in collaboration with colleagues (Drill et al., 2013; Levin, 2013). As Levin notes in a wide-ranging review of teachers’ use of research, for example: “the use of research is fundamentally a social and organisational process. Whether people are interested in, pay attention to and make use of research evidence depends much more on their organisational setting and social relations than it does on their individual background” (Levin, 2013, p. 10).

These points constitute problems for scientific content approaches while bolstering practical approaches. First, point (a) goes some way towards showing that the assumption that educational research literacy understood as a grasp of scientific content will be useful to teachers

and lead to an impact on educational practice is false. Even with such a theoretical grasp, teachers often do not use research and it thus does not impact practice. Teachers are thus largely made marginal insiders: they have some understanding of educational research and theory, but cannot see how it relates to their practice (point (b)). Indeed, taking the scientific content approach and bombarding teacher students with lots of scientific concepts and theories may in fact deter them from engaging with research, seeing it as too theoretical and complex, with limited relevance to their professional practice. The proof of an account of educational research literacy is in the pudding, and the scientific content approach does not fare very well.

Second, points (c) and (d) suggest that teachers' engagement with research is very different from researchers' and must rely on a variety of competencies that relate to teaching practice: it is a matter of seeing the relevance of research to an immediate practical context. The skills relied on are those of a competent outsider, not a marginal insider. Scientific content approaches do not have the resources to account for such skills.

Third, and relatedly, as point (e) suggests, the use of research is governed in part by teachers' knowledge of the moral and epistemic demands of their role. It is not a question of merely critically assessing research for reliability, but also for the extent to which it fits with the teachers' moral outlook. Scientific content approaches ignore this factor and relegate it to a procedure separate from research literacy, to do with application of research.

Fourth, point (f) suggests that engaging with research is not just a matter of an individual having a grasp of scientific content, which enables them to understand and assess it, and put the research into use on their own terms. It depends on the teacher being part of a joint project and a suitable organisational structure.

We can summarise the problems with the scientific content approach as follows. First, it is *detached* from practice: it is developed independently of how teachers in fact make use of research, and so does not give sufficient attention to the ways in which research literacy is inherently bound to teachers' contextually situated practice—within a network of colleagues and institutional actors, governed particular norms—where the aim is to integrate research into the practical domain. Second, it is too *demanding*: it requires teachers' understanding of research to mirror that of researchers themselves, and so does not respect the division of labour between teachers and researchers, and the extent to which the use of research is a joint project. Third, it is *decoupled* from normative theory: it cannot account for the ways in which research literacy requires sensitivity to the epistemic and moral demands of the teacher role. In short, the scientific content approach cannot account for the extent to which teachers are competent outsiders with respect to research.

We thus have reason to take a practical approach to research literacy. The aim of the rest of this paper is to develop an account that takes the three central points above seriously. This

requires seeing research literacy as having an epistemic dimension—concerning the critical assessment of the reliability of testimony concerning educational research—but also a moral and practical dimension—concerning the assessment of the extent to which such testimony is pertinent and can be integrated into the teachers’ practical domain, in line with moral and epistemic norms. We believe an account of the acquisition of testimonial knowledge provided by Miranda Fricker in her book *Epistemic Injustice* (2007) offers just the kind of theoretical tools to develop an account of the forms of reasoning involved in being a competent outsider. We begin by introducing the notion of testimonial sensitivity, and go on to explain how Fricker’s account can help explain teachers’ epistemic and moral agency with respect to research.

4. Educational research literacy as a form of testimonial sensitivity

4.1 Testimonial sensitivity

The empirical work above suggests that teachers engage with research in a way that is intimately bound up with the particular social context in which they are embedded, with its particular normative structure, and the particular practical problems and aims that arise during the course of their work. Teachers are anchored to teaching practice, and engagement with science occurs within it. They do not aspire to reason in the same way an educational researcher would. The scientific content approach to research literacy, which portrays research literacy as involving a subset of researchers’ knowledge, cannot easily account for this feature of teachers’ engagement with research. Again, taking this seriously requires the practical approach to research literacy. But if the assessment of research does not primarily involve applying knowledge of scientific content—such as research methods and concepts—in first-order assessments of research evidence, what does it involve? Crucially, it involves being sensitive to signs of trustworthiness and untrustworthiness in communicated information concerning research. This may involve sensitivity to signs of the trustworthiness of particular speakers, but can involve much more, such as a sensitivity to signs of the trustworthiness of institutions or the trustworthiness of aspects of the practice of educational research as a whole. Let’s call such sensitivity *testimonial sensitivity*.

In general, testimonial sensitivity is about having the right kinds of epistemic attitudes toward knowledge claims. Applied to research literacy, this crucially involves maintaining a receptive but critical stance towards communicated information concerning educational matters from a variety of sources. Teachers receive information from parents, school leaders, and other colleagues, broadly scientific sources, like scientific journals and communications from knowledge brokers, and so forth. On the one hand, the research literate teacher is *receptive* towards these sources: she is willing and motivated to take the information provided into account in her professional judgments. On the other hand, the research literate teacher is *critical* towards these sources: she is able to reliably assess the trustworthiness—the sincerity

and competence—of the source and the information provided, and place her trust competently. As Evans et al. note, research literacy “involves critical scrutiny of evidence”, not “an unthinking acceptance of received opinion” (Evans et al., 2017, p. 18). Receptivity without critical scrutiny would yield unreliable beliefs about teaching, about the school situation, and so forth; critical scrutiny without receptivity would block the teacher from crucial knowledge about the same issues. Both would yield unreliable professional judgment in the long run. But what does critical receptivity amount to? What requirements are there for teachers to acquire knowledge from the word of others?

In order to answer such questions, it is fruitful to turn to the general literature on the epistemology of testimony.⁶ There are numerous accounts of critical receptivity available. However, for the present purposes, we think Miranda Fricker’s (2007) account is particularly useful. She offers a virtue-based account of the epistemology of testimony, on which testimonial knowledge is acquired through the operation of an ability to *see* a piece of communicated information as trustworthy. This seeing is theory-laden, in the sense of being informed by background knowledge of “a body of generalisations about human cognitive abilities and motivational states relating to the two aspects of trustworthiness, competence and sincerity” (Fricker, 2007, p. 66). This background knowledge does not play the role of premises in any sort of inference: a judgment concerning the speakers’ trustworthiness is yielded non-inferentially upon taking in the particular features of a testimonial situation.

A great advantage of Fricker’s account is that it allows for a unified account of epistemic and moral agency. The virtue-based account highlights how testimonial sensitivity is akin to the perceptual abilities of someone who has the virtue of kindness, for instance:

The kind person does not go through any calculation or appeal to principle, thinking “This situation is one whereby I ought to show kindness [...]”. Rather, the kind person is one who is reliably sensitive to situational features that she will see as reasons for acting a certain way—a way that a third person would describe as kind. The perception of these situational features as reasons thereby delivers a judgement about what ought to be done in this situation. (Faulkner, 2014, pp. 190–191)

Likewise, the critically receptive person is reliably sensitive to features of testimonial situations, and this will result in judgments concerning the speaker’s trustworthiness, which provides a sound basis—a good reason—for testimonial knowledge. The hearer, having made the judgment, will be motivated to form a belief on the basis of the speaker’s testimony. If there are signs of untrustworthiness, the hearer will detect them, and judge the speaker to be untrustworthy, and so not form a belief.

⁶ For an overview, see Leonard 2021.

Our proposal, then, is that research literacy is to be understood in a virtue-theoretical framework of testimonial sensitivity. The research-literate teacher is reliably sensitive to a range of features in pertinent testimonial situations: clues, signs, and hints of trustworthiness and untrustworthiness of parents, colleagues, educational scientists, institutions and science communicators. And through this sensitivity, they make reliable judgments concerning the trustworthiness of these sources.

The sensitivity in question takes a particular shape with respect to the role of the teacher, so as to meet the epistemic and moral demands of that role. Various practices obviously differ with respect to signs of trustworthiness, and the particular demands in place for the grounds of testimonial knowledge: consider conversing in a pub versus giving testimony in a courtroom.

Given the teacher's role as a mandated educator of children, particular demands will be in place, and particular signs of trustworthiness will be pertinent. A teacher's testimonial sensitivity is formed through familiarisation with the demands on the teacher role in particular contexts. Some of this will simply be inherited from others through socialisation, and through becoming familiar with a body of professional knowledge, but there is clearly also room for the teacher to criticise practices of educational testimonial exchange on the basis of their own experience—this much is demanded by responsibility. The responsible teacher is able to maintain a critical distance to the testimonial sensitivity that she has inherited through socialisation.

While we think Fricker's notion of testimonial sensitivity is a useful way of conceptualising the intellectual agency involved in teachers' research literacy, there is reason to emphasise that this sensitivity takes a distinct form in the professional context. As we argue in the next section, the professional role requires that this sensitivity is informed by a set of further sensitivities that connect the transmission of knowledge with a respect for teaching as a distinct normative domain.

4.2. Testimonial sensitivity as informed by further sensitivities

In previous work, one of us has provided a general account of professional research literacy, where this is understood in terms of three professional sensitivities: *genre sensitivity*, *practice sensitivity*, and *situational sensitivity* (Eriksen, 2022). Here, we explore these in turn and focus on how they interweave with key aspects of testimonial sensitivity. This brings out research literacy as an intellectual virtue that integrates different epistemic sources into a coherent frame of practical deliberation for teachers.

Genre sensitivity: Applying research as a sub-theme of a broader narrative

The notion of genre sensitivity highlights the fact that teachers do not face the deliveries of research as an actor faces a finished script, but more like authors who are handed a "sub-theme to a broader narrative" (Eriksen, 2022, p. 8). The genre of responsible professional

reasoning involves a wider range of legitimate concerns than the genre of research. While the latter typically involves fidelity to a recognised method that can be systematically accounted for, the genre of professional reasoning integrates moral, collegial, political, pragmatic, and other types of concerns in a way that expresses fidelity to more abstract principles of responsible professional action. The genres do not simply differ in their normative range, however, but also in their thresholds for sufficient evidence. Due to their inevitable duty to act, teachers must accept the merits of a course of action before clear-cut evidence is at hand, contrary to researchers who can reject hypotheses until their methodological threshold for acceptance has been satisfied (cf. Hammersley, 2005, p. 324).

This situation indicates that the epistemic virtue of testimonial sensitivity requires reinterpretation in the case of professional research literacy. As Fricker develops it, there is a double focus on the speaker: “Some of the things our virtuous hearer needs to be sensitive to simply concern the speaker’s competence to know what he is talking about; but others concern his sincerity” (Fricker, 2007, p. 76). On the one hand, the focus on competence and sincerity has immediate relevance for teachers because they must also make such assessments concerning the deliveries of research. Are the practical claims of research made by people who are genuinely competent in this field? Relevant indicators here may be features such as cooperation between researchers and practitioners or previous track records. And are there reasons to suspect conflicts of interest or hidden agendas? An evidence-based programme that is tied to an expensive subscription to mentors and courses may call for extra suspicion concerning whether the evidence warrants such investment.

However, genre sensitivity suggests that the focus on competence and sincerity is complemented by a third mode of evaluation, namely complementarity: Does the research mesh with the wider range of commitments that attach to the teacher role? While Fricker’s account highlights testimonial sensitivity as a way of evaluating the *speaker*, genre sensitivity reminds us that evaluation of testimony must be informed by the *hearer’s* responsibilities. That is, the demands of “virtuous hearing” differ depending on whether one is a layperson, researcher, or professional. A layperson who has no directly relevant responsibilities may simply hear research findings as isolated facts that have no further implications for daily routines. A researcher may hear evidence as clues regarding what to do next in terms of conducting investigations or delivering expert advice. But this hearing is still restricted to the parameters of research. A teacher, by contrast, needs to hear research evidence as a potential component in a web of further concerns that impinge on professional work. For example, does complying with research require more resources? Do the teachers need to establish new channels of communication with parents? Are research recommendations compatible with ideals of classroom democracy?

In line with this, the “critical openness” that Fricker advocates (2007, p. 84) cannot simply be critical regarding competence and sincerity, but also regarding complementarity with the genre of the role. The claim is not that teachers should test the practical recommendations

of research against clear and precise criteria, but rather that spontaneous or intuitive experiences of lack of complementarity are taken seriously.

Practice sensitivity: Co-constructing the narrative in a professional community

As a component of research literacy, practice sensitivity is about understanding and applying research in a way that takes the form of a joint project. The implications of research are discussed and contested in a way that aspires to a shared professional understanding and evaluative outlook. For teachers, this can entail letting the meaning of evidence-based principles “evolve through mutual exchange of experiences with classroom strategies” (Eriksen, 2022, p. 11). The point is not that the professional community can jointly decide whether to respect the findings of research or not, but rather that the project of getting research to fit the genre of professional reasoning requires a process of mutual attunement in a collegial spirit.

This feature of research literacy is a necessary addendum to testimonial sensitivity understood as a singular enterprise. Fricker says “The virtuous hearer does not arrive at her credibility judgement by applying pre-set principles of any kind, for there are none precise or comprehensive enough to do the job. She ‘just sees’ her interlocutor in a certain light, and responds to his word accordingly” (2007, pp. 75–76). On the one hand, this way of framing things makes sense as a form of genre sensitivity. Seeing the research “in a certain light” may involve seeing research against the background of the complex demands of the role. On the other hand, this threatens to either overburden teachers (due to the complex array of concerns) or license a kind of subjective intuitionism devoid of explicit reason-giving. However, the real alternative is not between “precise and comprehensive principles” and “just seeing” the right thing to believe. Instead, it is reasonable to expect teachers to abide by procedural principles for engaging with research as a form of social practice. Between rigid rules and ineffable intuition, there is a process of mutual attunement.

The process of mutual attunement still calls for flexible virtues rather than “precise and comprehensive principles”. To engage constructively with research is not simply a matter of e.g. a group of teachers dividing a set of clearly defined epistemic tasks between them, performing these tasks in relative isolation, and then afterwards putting it all together through some quasi-mechanical process. Rather, it is a matter of creating a shared conceptual space, where the terms, findings, and recommendations are given practical meaning. And it is a matter of constructing a joint evaluative outlook through which participants in the joint project can discover ethical issues and applicable standards. Here, there may not be any process-independent concept of rightness to track. Rather, the right approach to research will sometimes constitutively require that teachers can jointly “own” the application and thereby take appropriate responsibility for it. A process of mutual respect within the profession enables teachers to meet other stakeholders with respect by reflectively endorsing and understanding the grounds of their own practice.

Situational sensitivity: Bridging the gap between generalised findings and idiosyncratic situations

As we have seen, the “critical” component of the critical openness involved in testimonial sensitivity is not simply about the competence and sincerity of research-based claims, but also about their practical appropriateness. That is, research-based assertions are received in a mode of being responsible for action in a domain governed by distinct professional commitments. A key feature of this practical awareness is the “situational sensitivity” of teachers, which enables them to go “beyond generic framings of problems and recognise discrete contextual features that shape validity of research-based input” (Eriksen, 2022, p. 10). For example, a behavioural programme aimed at reducing overall discipline infractions may require special attention to those who are already treating rules seriously and who may get anxious with more surveillance. Here, the generic framing of “reducing discipline infractions” needs to be contextually specified to mean “reduce discipline infractions in a way that is considerate of pupils who are already complying”.

The dynamic aspect of testimonial sensitivity helps explain how this kind of situational sensitivity can enable appropriate critical openness to research. For instance, a teacher who works in a school where the epistemic environment is positive toward a research-based intervention for improving reading comprehension, may—while initially sharing this positive attitude—come to feel that something is not quite right when the programme is implemented. The presumption of reliability is exchanged for a more critical gear. The claim is not that such experiences should always lead to the epistemic prioritisation of situated experience over research-based generalisations, but rather that they are taken seriously as legitimate triggers of critical reflection rather than merely some disturbing element to be overcome.

5. Testimonial sensitivity and the three professional sensitivities in action

So far, the argument has been that the agency involved in research literacy can be conceptualised in terms of the critical openness that characterises testimonial sensitivity. While we have claimed that this requires the operation of a set of further sensitivities, it is still unclear what this means more concretely. What does the practical approach look like in action? A sceptic might claim that the practical approach is unpracticable because it presupposes overly demanding intellectual operations. That is, while the scientific content approach demands too much with regard to thinking like a researcher, the practical approach demands too much in terms of translating research to the professional domain.

Some research into ways in which teachers engage with evidence-based programmes may support this criticism. It often concludes that teachers take a rather mechanical approach. For example, some find that evidence-based behavioural programmes are accepted and complied with by teachers because they allow an escape from the pressures of conflicting considera-

tions, thereby representing a form of “de-professionalization” through a surrendering of judgment (Haugen, 2018, p. 1172). In the same vein, other studies suggest that engagement with research is detached from reflection on the broader goals of education: “It seems that teachers’ engagement in and with research is experiencing a strong gravitational pull towards school effectiveness approaches, with a consequent loss of critical autonomy” (Leat et al., 2015, p. 274).

The goal of this section is not to question such findings, but rather to argue that more reflective modes of engagement can also be found by using the analytical lenses provided by the practical approach to research literacy. In the following, we present episodes that were analysed in Mausethagen and Hermansen’s (2023) study of teachers’ and leaders’ work with a research-based competence development programme, in light of the three sensitivities presented in section 4. The empirical study, which was conducted in the school year of 2021-2022, included extensive observations of competence-development sessions at a semi-urban primary school, and interviews with the involved teachers and leaders. In these sessions, school leaders facilitated the implementation of a research-based programme. The theme of this programme was dedicated to strengthening teachers’ recognition of pupils’ perspectives, experiences and abilities. It introduced concepts and tools that teachers could make use of in order to create more trusting teacher-pupil relationships.⁷

The three episodes discussed below serve as examples of genre sensitivity, practice sensitivity and situational sensitivity respectively. Interweaved through all the examples is the idea of critical openness that characterises testimonial sensitivity. According to our interpretation, the actors involved appear responsive to the potential knowledge gained through research, while also managing this responsiveness through an awareness of what constitutes trustworthiness in their particular domain.

5.1. The forms of knowledge and values in play—adherence and resistance (genre sensitivity)

As part of working with the research-based programme in the competence development sessions, teachers were asked by the facilitating school leader to discuss how results from national tests form a knowledge base that teachers can use in building relationships with pupils and as information to help them in their development. When the school leader asks for feedback after the teachers have discussed in groups, one of the teachers takes the floor and says that there is also some research that shows that many pupils are stressed by national tests. The teacher links this to how increased performance pressure in general can negatively affect the pupils and also negatively affect the relationship with the teachers and the school.

Our analysis of this example brackets the substantive merits of this claim. Instead, we want to highlight how its form can illustrate genre sensitivity. In particular, the teacher who brings

⁷ For more details about the structure of the programme, see Mausethagen & Hermansen, 2023.

relevant research into the discussion aims to link the knowledge resources of the programme to a broader set of values that are important to the profession. This is one of several observations in the case study where teachers seek to extend and connect different knowledge sources. Research on how individual pupils can use test scores was connected to the importance of seeing “the class as a whole”. The latter perspective was triggered by a sense of teacher commitments that involve fairness and solidarity, not just aggregated results.

These expressions of genre sensitivity also indicate the presence of the critical openness that characterises testimonial sensitivity. The teachers trust research-based claims as a source of profession-relevant knowledge, but their value-based commitments to relationships and class community also trigger critical awareness. They respond as “hearers” in a way that is shaped by their responsibilities as teachers. Interestingly, such expressions of genre sensitivity were not particularly welcomed by the school leader who facilitated the discussion. The teacher who highlighted research on how the tests are accompanied by stress and partly detrimental to teacher-pupil relations was rather met with the claim that this is irrelevant to the current discussion. This suggests that the school leader is complying with a narrower genre than the one that the teachers appeal to.

5.2. School staff as gatekeepers—selecting and adapting (practice sensitivity)

A key part of engagement with research is to decide the appropriate thematic focus. In the case study, the municipality in which the present school resides had decided that all schools should work with the theme of “professional community” and follow the National Directorate of Education's so-called “competence package” on this topic. However, the school management and the teachers felt that this package was a bad fit. Hence, ironically, the predefined package of “professional community” failed to respect the needs of the school’s own professional community. As an alternative, the staff wished to engage with research on terms that tracked the school’s own specific challenges. School leaders placed particular emphasis on the increased challenges they experience related to pupils who are struggling both socially and academically. They describe that neither they nor the teachers have had the necessary competence to meet the challenges that connect with mental health and issues concerning mastering self-regulation. A key theme was the need to expand the “concept of normality” in Norwegian schools.

Here, the school staff manifested practice sensitivity in their ambition to engage with research on terms emanating from their ongoing conversation as a local professional community. This was not simply about content, but also about process. Being handed pre-decided themes in a top-down manner was perceived as epistemically irresponsible: “It's kind of silly because it makes you get a little bit lax just because we get everything served, right: ‘Here's the theory you're going to use, here's the task you're given’.” Moreover, this example illustrates the importance of prioritising, as a part of testimonial sensitivity. Instead of treating all sources of

research-based knowledge as equally important, the leaders and the teachers used their practice sensitivity to filter out research-based packages that lacked sufficient relevance. The intellectual resources involved in critical openness are best spent in ways that foster broad engagement and responsible take-up, which requires research themes that track problems that are mutually acknowledged and deemed worthy of sustained deliberation.

5.3. Changing challenges—changing knowledge needs (situational sensitivity)

At its conclusion, the programme was evaluated through discussions. Here, the teachers reflected on how the project related to their experiences of increased challenges concerning pupils' behaviour and mental health in the aftermath of the coronavirus pandemic and home-schooling: "It's a completely different school than it was three years ago. It's been three heavy winters." The teachers felt that the changing set of pupil challenges called for new knowledge and an update of their practical perspectives. While the programme had been useful, there was a widespread perception that some components were narrowly focused on their responsibilities as teachers and failed to integrate the broader educational environment, such as other support capacities and the involvement of parents. In particular, they were provoked by perspectives from one of the psychologists responsible for the research programme, who was perceived as placing unreasonable demands on individual teacher capacities.

This example illustrates how situational sensitivity involves registering how research relates to dynamic circumstances, in this case, changes due to the coronavirus pandemic. However, it also brings out the importance of the kind of experiential triggers of critical openness highlighted earlier. Teachers experienced a clash between the input from the psychologist and their lived experience of lacking support systems and their responsibilities concerning the collective of pupils in the class, and not only individual pupils. Their objection was not that the psychologist's advice was scientifically inadequate, but rather that it failed to grasp their actual predicaments. Moreover, their response involved a normative and creative component. They imagined alternative states of affairs, where other sources of support were available. Here, their experiences of a clash played a constructive role in triggering resistance based on normative reasons rather than mere cognitive discomfort.

The case of a clash between the psychologist's input and teachers' experiences of problems is an example of a broader phenomenon that generalises to all three cases: The teachers reacted to the research-based programme in a way that reflected a need to *embed* its recommendations in a broader epistemic and moral environment. *Genre sensitivity* called for connecting knowledge about individual test scores to research on how trusting relationships are upheld and how the class can thrive as a whole. *Practice sensitivity* alerted teachers to the need to connect research to their shared and ongoing conversation in the local professional community. In the same vein, *situational sensitivity* triggered a sense of mismatch between systemic problems and narrowly oriented proposals. These responses are all guided by a felt need to "anchor" research in the professional role (to use Feinstein's term). Hence, they serve

the work of research literacy, which is to make the domain of research speak to the professional domain in a way that secures trustworthiness.

In sum, these examples provide a response to those who think the practical approach is too demanding. While it is possible to interpret the approach in a highly ambitious way, requiring complicated and explicit reasoning, we think this section illustrates a more modest version. Teachers appear to display the relevant sensitivities as a natural part of their work, being already immersed in a professional ethic and norms of collegial deliberation. Hence, the practical approach provides analytical tools for a normative reconstruction of teacher engagement with research, rather than merely a set of ideal prescriptions detached from actual modes of reasoning.

6. Conclusion

We have argued that scientific content approaches to research literacy cannot account for the extent to which teachers' acquisition and employment of research-based knowledge is tied to practical, epistemic and moral norms that govern teaching practice. As an alternative, we have provided a practical approach, which accounts for research literacy in terms of a role-specific testimonial sensitivity informed by genre, practice and situational sensitivities. This makes for a normatively attractive and empirically plausible way of conceptualising responsible professional agency in the transmission and enactment of research-based knowledge. The approach also respects the division of cognitive labour: it does not construe teachers' understanding of educational research as a subset of educational researchers' understanding. It tallies with the idea that the use of research is an inherently social phenomenon, bound to a particular context with specific normative structures that must be discerned.

Article history

Received: 24 Mar 2023

Accepted: 08 Nov 2023

Published: 11 Dec 2023

References

- Bartels, N. (2003). How teachers and researchers read academic articles. *Teaching and Teacher Education*, 19(7), 737–753. <https://doi.org/10.1016/j.tate.2003.06.001>
- BERA-RSA. (2014). *Research and the teaching profession: Building the capacity for a self-improving education system* (Final report of the BERA-RSA inquiry into the role of research in teacher education). Retrieved from <https://www.thersa.org/globalassets/pdfs/bera-rsa-research-teaching-profession-full-report-for-web-2.pdf>
- Borg, S. (2009). English language teachers' conceptions of research. *Applied Linguistics*, 30(3), 358–388. <https://doi.org/10.1093/applin/amp007>

- Boyd, P. (2022). Teachers' research literacy as research-informed professional judgment. In P. Boyd, A. Szplit, & Z. Zbróg (Eds.), *Developing teachers' research literacy: International perspectives* (pp. 17–44). Wydawnictwo Libron.
- Boyd, P., Szplit, A., & Zbróg, Z., (Eds.). (2022). *Developing teachers' research literacy: International perspectives*. Wydawnictwo Libron.
- Cain, T. (2016). Research utilisation and the struggle for the teacher's soul: A narrative review. *European Journal of Teacher Education*, 39(5), 616–629.
<https://doi.org/10.1080/02619768.2016.1252912>
- Canrinus, E. T., Bergem, O. K., Klette, K., & Hammerness, K. (2017). Coherent teacher education programmes: Taking a student perspective. *Journal of Curriculum Studies*, 49(3), 313–333. <https://doi.org/10.1080/00220272.2015.1124145>
- Drill, K., Miller, S., & Behrstock-Sherratt, E. (2013). Teachers' perspectives on educational research. *Brock Education Journal*, 23(1), 3–17.
<https://doi.org/10.26522/brocked.v23i1.350>
- Eriksen, A. (2022). The research literacy of professionals: Reconciling evidence-based practice and practical wisdom. *Professions and Professionalism*, 12(3), Article e4852.
<https://doi.org/10.7577/pp.4852>
- Evans, C., Waring, M., & Christodoulou, A. (2017). Building teachers' research literacy: Integrating practice and research. *Research Papers in Education*, 32(4), 403–423.
<https://doi.org/10.1080/02671522.2017.1322357>
- Faulkner, P. (2014). IX—A virtue theory of testimony. *Proceedings of the Aristotelian Society*, 114(2), 189–211. <https://doi.org/10.1111/j.1467-9264.2014.00370.x>
- Feinstein, N. (2011). Salvaging science literacy. *Science Education*, 95, 168–185.
<https://doi.org/10.1002/sce.20414>
- Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198237907.001.0001>
- Groß Ophoff, J., Wolf, R., Schladitz, S., & Wirtz, M. (2017). Assessment of educational research literacy in higher education: Construct validation of the factorial structure of an assessment instrument comparing different treatments of omitted responses. *Journal for Educational Research Online*, 9(2), 37–68.
<https://doi.org/10.25656/01:14896>
- Hammersley, M. (2005). The myth of research-based practice: The critical case of educational inquiry. *International Journal of Social Research Methodology*, 8(4), 317–330. <https://doi.org/10.1080/1364557042000232844>
- Haugen, C. R. (2018). New middle-class values and context: Exploring an ideological conflict between a Norwegian school and parents over an American evidence-based programme. *British Journal of Sociology of Education*, 39(8), 1160–1174.
<https://doi.org/10.1080/01425692.2018.1483819>

- Joram, E., Gabriele, A. J., & Walton, K. (2020). What influences teachers' "buy-in" of research? Teachers' beliefs about the applicability of educational research to their practice. *Teaching and Teacher Education, 88*, 1–12.
<https://doi.org/10.1016/j.tate.2019.102980>
- Keren, A. (2018). The public understanding of what? Laypersons' epistemic needs, the division of cognitive labor, and the demarcation of science. *Philosophy of Science, 85*(5), 781–79. <https://doi.org/10.1086/699690>
- Korthagen, F. A. J., & Kessels, J. P. A. M. (1999). Linking theory and practice: Changing the pedagogy of teacher education. *Educational Researcher, 28*(4), 4–17.
<https://doi.org/10.2307/1176444>
- Leat, D., Reid, A., & Lofthouse, R. (2015). Teachers' experiences of engagement with and in educational research: What can be learned from teachers' views? *Oxford Review of Education, 41*(2), 270–286. <https://doi.org/10.1080/03054985.2015.1021193>
- Leonard, N. (2021, April 1). *Epistemological problems of testimony*. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy Archive* (Spring 2023 Edition). <https://plato.stanford.edu/archives/spr2023/entries/testimony-episprob>
- Levin, B. (2013). To know is not enough: Research knowledge and its use. *Review of Education, 1*(1), 2–31. <https://doi.org/10.1002/rev3.3001>
- Mausethagen, S., & Hermansen, H. (2023). Forskningslitterasitet hos lærere og ledere i skolen—en casestudie [Research literacy in teachers and school leaders—a case study]. In Mausethagen, S., Bøyum, S., Caspersen, J., Prøitz, T.S., & Thue, F. (Eds.), *En forskningsbasert skole?—Forskningens plass i lærerutdanning og skole* [A research-based school?—The place of research in teacher education and school]. Universitetsforlaget.
- Mausethagen, S., Prøitz, T., & Skedsmo, G. (2018). Teachers' use of knowledge sources in 'result meetings': Thin data and thick data use. *Teachers and Teaching, 24*(1), 37–49.
<https://doi.org/10.1080/13540602.2017.1379986>
- Miller, S. (2001). Public understanding of science at the crossroads. *Public Understanding of Science, 10*(1), 115–120. <https://doi.org/10.3109/a036859>