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The professional teacher and educational research

This chapter:

- considers the nature of professionalism in teaching
- presents the notion that a 'strong' model of teacher professionalism is linked to the ability to both critique research claims to inform one's own teaching and to carry out small-scale research to develop practice
- explains the importance of research to studying education at post-graduate level
- explains the rationale for the structure and style of the book.

This book provides an introduction to research into classroom teaching and learning. It is *not* a textbook on teaching and learning that draws upon classroom research, and so provides teachers with lessons from research that they should consider adopting in their own teaching. Such books exist (see the list of further reading at the end of the chapter), and are useful, but this book is as much about the nature and processes of classroom research as it is about the outcomes. The reader *will* find many examples of research findings considered in the following chapters, and a careful reader will learn a good deal about teaching and learning by reflecting upon these findings.

However, the book is as much about *how* teaching and learning can be explored through research as it is about what research has found. There are a number of linked, but distinct, reasons why a book for teachers, and those starting out on a teaching career, should have such a focus. These reasons are both principled and pragmatic.

On the pragmatic side, teachers, and especially students on courses of initial teacher education ('teacher training'), are increasingly being expected to demonstrate 'evidence-based' practice, or 'research-informed' practice. Indeed, practitioner (teacher) research has become very common in recent years, so that in many schools it may be normal, or even expected, that teachers engage in research as part of their work (McLaughlin, Black-Hawkins, Brindley, McIntyre, & Taber, 2006). This tendency may well increase as senior managers seek to develop their schools through engagement with research (Wilkins, 2011). This book is designed to help teachers develop the skills for making sense of, and planning, classroom research.

On the more principled side, this move to require teachers to be research-savvy, or even research-active, may be seen as part of the development of teaching as a profession. Teaching has been *referred to* as a profession for a very long time, and has been (in general) a graduate-entry career for some years. However, professionalism is more than earning a living – the key feature of *the professions* is that they are self-regulating groups of professionals. In the English context, for example, it was as recently as 1998 that the government handed over responsibility for registration of teachers to the General Teaching Council for England, a body representing teachers, and having the power to debar them by suspending registration. Even then, registration depended upon being awarded ‘Qualified Teacher Status’ through the government’s criteria.

Incredibly, the English government decided to abolish this (supposed) professional body of teachers in 2012, and replace it with an agency that was directly controlled by the government ministry. This clearly brings into question whether teaching in England can really be seen as a profession, if its regulatory body is in the gift of an agency external to the profession itself. This suggests that despite any rhetoric about the professional standards and responsibilities of teachers, teachers in England are not trusted by government to be professional enough to regulate themselves, i.e., to be fully professional.

Despite this, the present book is driven by a view that teaching should be a profession, and that qualified teachers should have the status of professionals. Professionals have to use their specialist knowledge and their professional experience to make judgements of a kind that cannot simply be based on following lists of rules. Of course there are rules that teachers should follow, but to be an effective teacher one has to constantly make quick decisions relying on professional judgement in the myriad situations where there are no simple straightforward rules to tell you what to do next.

We would expect any professional to be well informed about developments in their area of work, and to follow guidelines for ‘best practice’. This is, of course, the case in teaching, but for many years we have seen what I would characterise as the ‘weak’ model of professionalism in teaching in this regard.

The weak model of teacher professionalism

In this weak model, the teacher fulfils the requirement to follow ‘best practice’ without taking a major responsibility for exploring what that might mean. In this model (which, of course, is a caricature – but nonetheless represents the general pattern followed in the past by many teachers) teachers are told what research has found out during their initial ‘training’, and are updated from time to time – perhaps through courses or staff development days, but largely via centralised official ‘guidance’. In other words, the government commissions research, interprets it, forms policy, and issues ‘advice’.

In at least one instance, the case of the ‘National Strategies’ in England, one could be forgiven for thinking that the government issued enough guidance to allow teachers *never* to have to again think for themselves. That is, at least, if any busy teacher found enough time to study all the files, and booklets, and videos, and charts and sundry other material that were produced and distributed at great expense. (Much of

this guidance was fundamentally sound, and well intentioned, but the sheer volume, and mode of dissemination, were more suited to keeping a store's retail staff updated with the latest products than informing the professional work of qualified graduate teachers.) So in this model, the teacher teaches, but others (with more time and other skills perhaps) are given the responsibility to find out *how* they should teach.

Secondary science teachers, for example, were provided with a great deal of material about teaching science to 11–14 year olds, and much of this drew upon some of the vast amount of research into teaching that subject which is available around the world. Key points from the research were summarised into succinct bullet points suitable for being presented to teachers in development sessions, and translated for teachers into advice on how to teach topics and sequence material.

Question for reflection

Given that teachers are busy with preparing, teaching and assessing, and all the other work involved in carrying out their duties, is it not a good idea for the authorities to interrogate and interpret research to guide teachers in how to do their jobs more effectively?

I am not suggesting here that such attempts by government agencies at guiding teachers in their classroom work are completely inappropriate, but there are problems with such an approach. The first is in terms of that notion of professionalism. No matter how well meaning a government, and no matter how skilled its advisors, it is not the profession. If teaching is the concern of the teaching profession, then the profession should be taking the lead, not being told what to do. The government is of course a major stakeholder in education, but its agenda is inevitably political. Governments should act politically, but professions are meant to be independent and self-regulating.

A five-part lesson is right out

There is, of course, a distinction between what governments *require* teachers to do, based on education policy, and guidance that is meant to *suggest* how they may best go about it. In theory, guidance is just that, and teachers are free to decide when it is best not to follow it. In practice, much of the guidance issued by government translates into *expectations* on teachers: for example, what school Inspectors *expect* to observe during inspections that may have serious implications for schools. (Or sometimes, just what school management teams fear Inspectors will expect to observe.) This can lead to ridiculous, unintended outcomes, so that at one time teachers in many English schools were expected to plan all their lessons with three distinct, discrete parts, because an effective lesson has three parts, and if Inspectors called they would expect to see a three-part lesson.

Clearly the advice to break a lesson up into three parts was well intentioned, but it would be a nonsense to have a general rule that all effective lessons (for 5 year olds or 16 year olds, in whatever curriculum area) will have three parts. Yet for a while in England many teachers were pressured to be seen to be following this fiat as though it had some kind of divine authority:

[In structuring your lesson] shalt thou count to three, no more, no less. Three shalt be the number thou shalt count, and the number of the counting shalt be three. Four shalt thou not count, neither count thou two, excepting that thou then proceed to three. Five is right out.

(Chapman et al., 1974)

However, as was pointed out in the *Times Educational Supplement*:

There is no stone tablet that decrees every lesson must consist of three sections. “And, yea, thou shalt teach every lesson as a perfect trinity. Thou shalt have no other lesson structure but this. He that forgeteth the starter activity, main section and plenary shalt be struck down and forsaken.”

(Shaw, 2012)

If teachers are to be professional, then they need to question such expectations – not for the sake of being difficult, but to ensure they are confident that the guidance is appropriate in their professional context. A teacher must be free to *not* follow guidance that they judge as inappropriate in a particular teaching situation. To do this, without penalty, they need to be able to argue a case for their actions (to colleagues, to school managers, to parents and governors, to school inspectors, and to those most intimately involved, the learners), *based on evidence*.

Before the reader starts to suspect that they are being asked to be some kind of subversive element – disrupting the carefully researched and disseminated approaches recommended by government agencies – it is important to point out that the government itself explicitly recognises that this weak model of professionalism is not appropriate. There is a very good reason why government and the profession accept the need for teachers who are critical and reflective in considering advice. This is that educational research seldom offers clear unambiguous guidance about the best way to teach. This will be no surprise to teachers with backgrounds in social science or the humanities. It is not difficult to find different research studies that at first glance offer opposite conclusions. (The reader will meet some examples later in the book.)

Such contradictory research findings may sometimes indicate shoddy work (and this book will provide skills in making judgements about the quality of research), but it is often the case that such apparent contradictions may derive from well-executed studies. This leads us to ask how it can be possible that two carefully undertaken studies can sometimes lead to apparently opposite conclusions.

— Educational phenomena are complex —

Schools, children, classrooms etc. are very complex entities, and it is seldom possible to make statements about *teaching history*, or *learning to play a musical instrument*, say, which are as definitive as the statements we can make about the melting point of lead, or the type of landscape produced when glaciers retreat.

General statements about teaching and learning are often *too general* to inform teacher decision-making in relation to specific classes. Whilst there are some important

general principles that are always useful, it is not possible to assume that research that showed X worked in classroom Y will *necessarily* tell you anything about your class Z.

In the case of the guidance to science teachers issued as part of the National Strategies initiative, some quite complex and nuanced research was summarised in terms of a few general principles and recommendations for practice, which were abstracted from the peculiarities of particular schools, classroom and classes of students. The need to provide simplistic summaries of the research suitable for including in published guidance led to oversimplistic accounts unlikely to enable teachers to significantly change their existing ways of working (Taber, 2010b).

The method of 'delivery' of the recommended research-based pedagogy reflected a centralised approach: materials written at national level were used to prepare trainers (appointed as 'consultants') to present ideas and teaching materials to groups of teachers, who would then 'cascade' what they had learnt to colleagues in their schools. The pedagogy being recommended to teachers was a constructivist one which acknowledges the way each individual learner interprets ideas differently and has to make sense of them in terms of their own existing understanding and learning context (Taber, 2011a). The pedagogy used to teach the teachers about this involved mass-produced presentations delivered through a scripted teacher-centred classroom approach. This perhaps tells us something about either the level of confidence in the recommended approach, or the level of funding made available to support the programme of 'consultants' 'delivering' the 'training'.

Because of the complexity of the individual classroom context, most detailed ideas from educational research need to be tested out to see if they *transfer* to our own context and apply in our classes. Moreover, we can save ourselves a lot of work and anguish if we are able to read research in ways that help us filter out ideas that are unlikely to 'work here'. Again, that is something that this book sets out to help develop.

The effective application of the ideas in teaching would require careful exploration of their implications by trying out approaches with classes, and then reflecting upon the outcomes, supported by dialogue with other professional colleagues – ideally with both those experienced in the teaching approaches (having some expertise) and others still becoming familiar with them (and so more directly able to relate to the challenges faced by the relative novice). It is this combination of exploring ideas with experts and peers that many students find so useful on a PGCE or similar course.

The strong model of teacher professionalism

Although the widespread incidence of teacher-research is a relatively new phenomenon, in practice teachers have always had to find out 'what works here'. In the first edition of this book I quoted the statement from the then standards used to evaluate new teachers, i.e., that:

Those awarded Qualified Teacher Status must [demonstrate that] they are able to improve their own teaching, by evaluating it, learning from the effective practice of others and from evidence. They are motivated and able to take increasing responsibility for their own professional development.

(TTA, 2003)

I suggested that this was part of what might be characterised as a *strong* model of teacher professionalism: each classroom teacher is expected to actively evaluate his or her own work, and to seek to improve it – using evidence.

— Undermining the strong model —

Since that edition of the book was published, a new set of ‘Teachers’ Standards’ has been introduced (Department for Education, 2012), which are worded somewhat differently. These include requirements that a teacher must:

demonstrate a critical understanding of developments in the subject and curriculum areas, and promote the value of scholarship. (p. 6)

take responsibility for improving teaching through appropriate professional development, responding to advice and feedback from colleagues. (p. 8)

These changes could be considered to reflect potentially significant shifts in emphasis: that the focus of the teacher’s development efforts should be less about what is happening in their classroom and more on developments in their subject; that the key source informing the development of teaching should be the advice of other teachers, rather than the evidence collected through the teacher’s own classroom enquiry. These shifts could again be seen as ideologically driven: to downplay the role of pedagogy compared to the structure of the discipline being taught; to emphasise the importance of teachers being guided by (the authority of) others, rather than seeking their own solutions to classroom issues.

— Prerequisites of strong professionalism —

Whether the rephrasing of the Teachers’ Standards was deliberately intended to undermine aspects of teacher professionalism or not, to some extent, researching one’s own professional work is now an accepted ‘part of the job’ for today’s teacher. This certainly does not mean teachers are expected to ‘reinvent the wheel’. As the 2003 professional standards suggested, the starting points for improving teaching are a reliable evaluation of current strengths and weaknesses, and having access to ideas about what ‘effective practice’ might be. So teachers need to know:

- what might be considered ‘effective practice’ in other classrooms (and be worth testing out in the present context); and
- how to collect suitable evidence to inform evaluations of (a) existing practice, and (b) the effect of any innovations introduced.

This clearly requires the teacher to have both the procedural knowledge to undertake small-scale classroom enquiry, and ‘conceptual frameworks’ for thinking about teaching and learning that can provide the basis for evaluating their teaching. In other words, the professional teacher needs both the ability to do her own research and knowledge of what existing research suggests (Taber, 2010c).

So, do teachers need to be educational researchers?

The strong model of teacher professionalism puts more responsibility and autonomy in the hands of the individual teacher. It is primarily the teacher's role to make decisions about how to teach, but – being a professional – these decisions must be justifiable. Teaching decisions can be justified in terms of theory and practice: knowledge drawing on published research and the analysis of evidence collected in the classroom.

So, *in a sense*, the teacher is an educational researcher. But there are also other individuals who have the specific job description 'educational researcher'. It is important to realise that there is in principle a substantial difference between the 'research' that teachers are being asked to undertake as a matter of course and the academic research being undertaken by professional educational researchers. The latter have an in-depth training in research methodology, substantial time (and institutional resources) for research, and an obligation to produce 'public knowledge' (Ziman, 1968). The expectations on academic researchers, in terms of the level of scholarship, the rigour of research and the generalisability of findings, do not apply to teachers (this theme is developed in Chapter 5). Teachers may often be *capable* of this type of work. Indeed, sometimes teachers are able to demonstrate that their research does indeed meet these expectations, and publish their findings in research journals (a possibility considered in Chapter 12). However, in general, it would be totally unreasonable to expect this of busy classroom teachers as a matter of course: teachers have other responsibilities and priorities.

So there is a spectrum here, then, rather than a dichotomy, with published professional academic research at one pole and small-scale practitioner enquiry undertaken to improve one's own teaching at the other pole. There is a minimum expectation for teachers to be active at one pole, and nowadays in many schools teachers are encouraged to go further and undertake enquiry that is 'published' internally through departmental meetings, school intranets, or at meetings of schools working as 'learning networks' or 'learning communities' (see the examples in McLaughlin et al., 2006). Many teachers undertake research projects for Masters' or doctoral degrees, where basic training in research methods is provided and increasing levels of academic rigour are applied. The key message here is that all teachers are now required to be able to demonstrate research-informed and evidence-based practice, and many are going much further than this.

Support for the teacher-as-researcher in initial teacher education

So there is now a minimal expectation on all teachers to be able to show that their work is informed by published research and the analysis of evidence collected in their own classrooms. As with any other aspect of the teacher's work, it is important that teachers are supported in meeting these requirements. This is especially important during initial teacher education, if only because for many teachers this may be the only stage of their career when they have:

- ready access to academic advisors;
- ready access to a research library;
- ongoing mentoring from experienced practitioners;

- a teaching programme and timetable designed to allow sufficient time for thorough planning, reflection and lesson evaluation;
- a substantial peer group at a similar stage of development, struggling with the same issues and skills;
- regular observation and feedback on their teaching;
- regular opportunities to visit other classrooms and see teaching and learning with different teachers and groups of learners.

Few ‘trainee’ teachers probably appreciate just what luxury they have in this regard – at least until they move into their first teaching appointment!

PGCE (Post-Graduate Certificate in Education) courses traditionally require students to submit a variety of assignments, usually incorporating evidence of both understanding of ‘theory’ and the application of such ideas to classroom practice. Passing the course normally means satisfying the examiners in these assignments, as well as demonstrating all the competencies outlined in the teaching standards.

In many of the universities, the PGCE includes at least one assignment that is based on a fairly substantive project, where the student is expected to demonstrate familiarity with some area of research literature, and to undertake some type of empirical study. For example, this may be based around the development of teaching resources, with a critical evaluative commentary drawing on evidence of learning outcomes. The assignments on a PGCE are an academic requirement of the course, but have in the past sometimes been designed and judged from the perspective that the students are *primarily* engaged in a professional training course, and academic demands should not be too burdensome. Such a view is changing.

‘Mastering’ the PGCE

In effect, the Post-Graduate Certificate in Education has become an academically more rigorous qualification. There are two reasons for this. One concerns routes into teaching. Since teaching has been considered a graduate profession, the two main routes into teaching have been by studying for an education degree or, for those already holding a degree, taking a PGCE course. The curriculum for the PGCE was largely at the discretion of the awarding university.

In recent years the government has introduced centrally determined teaching standards, which are seen as the means to qualify as a teacher. PGCE courses must incorporate these, but in addition there has been the development of a range of alternative routes to qualified teacher status for graduates (including ‘school-based’ routes with less input from ‘the Academy’, as favoured by the present UK government). PGCE is no longer the only way for a graduate to become a teacher. It therefore becomes pertinent to ask why students should enrol for a year at a university when they could train whilst employed in a school. This is not the place to debate the relative merits of PGCE, but clearly one of its characteristics is that it is an *academic* university qualification.

In parallel with these developments in preparing teachers, there has been a move to rationalise the qualifications framework at all levels of the education system. Under these developments universities have agreed to a common understanding of the level

of their awards, and the terminology used. As part of this understanding, the expression 'post-graduate' is taken to mean a qualification at a *higher level* than a first degree (not just something taken afterwards). In many universities, therefore, the PGCE qualification is being developed in response to the requirement that any qualification labelled *Post-Graduate* (rather, than say, a '*professional* graduate qualification') should be substantially at M (Master's level). One of the consequences is that many students applying for a PGCE will find that universities increasingly see the PGCE as (potentially at least) the first part of a Master's programme that will be taught over the training year and the first few years in post. Applications will be considered accordingly, and applicants may be expected to demonstrate Master's level aptitude if they wish to take this route. To meet the expectations of the PGCE being a post-graduate course, universities reviewed their assignments, and the assessment criteria by which they were marked, to ensure they enabled the university to judge that the students meet the expectations of post-graduate study where:

Much of the study undertaken at Master's level will have been at, or informed by, the forefront of an academic or professional discipline. Students will have shown originality in the application of knowledge, and they will understand how the boundaries of knowledge are advanced through research. They will be able to deal with complex issues both systematically and creatively, and they will show originality in tackling and solving problems.

(QAA, 2001)

Such an agenda fits well with the expectations outlined above for the teaching profession. Those students who use their PGCE as the first stage of a full Master's programme will go on to write a substantial thesis – some type of synthesis of research literature or, more often, an empirical enquiry informed by existing research – and so the PGCE assignments will also become the first part of a programme of preparing students for planning their Master's project and writing their thesis.

In summary:

- in the 21st-century context of *being* a teacher, there is an expectation of engaging with, and to some extent in, educational research;
- in the 21st-century context of *becoming* a teacher, there is an expectation of being prepared to engage with, and to some extent in, educational research;
- in the 21st-century context of becoming a teacher through a *post-graduate* route, there is an expectation of engaging with educational research at a high academic level.

It is in this context that the present book sets out to offer support to teachers and students by providing an introduction to educational research into teaching and learning.

What is expected of students undertaking research?

There tend to be two kinds of student undertaking educational research. There are many full-time students (sometimes, but not always having teaching backgrounds) who enrol in research degrees in education and are, in effect, learning how to be academic

educational researchers. In the case of doctoral students, the expectation is that by the end of the process they will meet the expectations of other professional academic educational researchers – they will be able to publish their work in peer-reviewed academic research journals. Master's students are not *expected* to proceed as far, but on graduating should be competent to join research projects in a professional capacity if not necessarily lead on their own research. Many Master's projects do produce material suitable for submitting to research journals. Generally, then, the expectations of academic research apply to these students.

The other kind of student undertaking educational research is primarily a teacher, but undertaking research as part of initial preparation for teaching or for professional development once in post (perhaps for a certificate or diploma, or a Master's degree, or perhaps a doctorate in education, an EdD). A primary purpose of the research training provided to these students is intended to support them in becoming effective practitioners who can use research to support their professional work, rather than to make them professional researchers.

However, the university making the award may well take the view that to fully understand research processes it is important that students are taken through the logic and rigour of thinking about and reporting their work in the way academic researchers do. This is not just because the teachers on the university course are probably academic researchers themselves, so think in those terms, nor because the university staff see teacher-researcher as an inferior type of research, unlike 'proper' academic research. Rather, the logic here reflects the way teachers in training are taught to plan their lessons.

Commonly, new teachers are expected not only to go through a clear logical process to make sure they are planning appropriate lessons, and including suitable learning activities, but also to justify their decision-making through quite detailed documentation. Yet most experienced teachers seldom plan and record their plans in quite this systematic way (or indeed have time to). However, when the teacher is starting out, it is important to make the thinking processes of lesson planning explicit, so that the reasoning can be carefully scrutinised. With experience (of planning, teaching and evaluating lessons, of teaching the 'same' lesson to various classes, etc.), the teacher builds up a vast store of tacit professional knowledge to guide her or his decision-making that the new teacher simply does not have. The logic, then, is to go through a rigorous, explicit process when starting out, which will partly become more automatic and intuitive later on.

A similar logic applies in learning to undertake classroom research. University staff often consider that the best way to ensure students are using classroom research effectively is to go through processes that mimic the rigour of academic research. This both makes sure that the students' thinking is made explicit and so is open to their own reflection and critique, and by requiring a formal report allows the assessors/examiners to make judgements about the quality of the thinking underpinning students' classroom work.

This is summarised in Table 1.1, which sets out the differences in what is expected of the different types of educational researcher. However, a strong word of warning must be added here. Each university sets its own expectations for its course, and has its own types of assignment and assessment specifications. The extent to which student teachers must adopt an academic style of presentation of their work can vary from one

Table 1.1 Different expectations on different types of researcher

	<i>Researchers and researchers-in-training</i>	<i>Teachers and teachers-in-training</i>
Undertaking research as part of professional role	Expected to produce generalisable research addressing issues motivated from the research literature, in the form of knowledge claims published in academic research journals	Expected to have the skills to undertake classroom-based enquiry to inform their own practice and to be able to justify research-informed decisions (to colleagues, inspectors, parents, etc.)
Undertaking research for a university course and qualification	Expected to demonstrate developing competence in producing generalisable research addressing issues motivated from the research literature, in the form of knowledge claims of the type published in academic research journals	Expected to show developing competence in classroom-based enquiry to inform their own practice, and <i>may</i> also be expected to frame and report their enquiry in the form of an academic research report – addressing issues motivated from the research literature, and reporting findings as knowledge claims supported by the analysis of classroom data

university to another. If you are studying for a university course, either part-time or full-time, whether as a trainee teacher, a teacher, or as a research student in education, you should familiarise yourself with the requirements of any research assignment you are set, and the assessment criteria that will be used to judge it.

The specific nature of teacher research is considered further in Chapter 5, but it is important not to think that teacher research is necessarily only of local interest, in the particular school or classroom context in which it is undertaken, and so somehow inferior to professional academic research which is taken more seriously by those making decisions about education. Teachers can have influence more widely, especially when working together through organisations like teaching subject associations. So, writing in the *Curriculum Journal* about the case of history teaching in the context of the English National Curriculum, Counsell (2011, p. 208) discusses how teachers have “built activities designed to shift pupils’ ideas within particular conceptual domains”. She reports that “examples of history teachers doing this are extensive, often spinning from a single, starting example that teachers pick up, reshape and then throw back into the community for continued debate”. Counsell suggests that the inclusion of ‘historical significance’ in official curriculum attainment targets was “largely in response to burgeoning teacher discussion, by then spanning over 20 articles, many web discussions and new textbook activities”.

Examples of classroom research undertaken by new teachers

As part of the process of supporting teachers new to educational research, the current edition of the book draws upon examples of research undertaken by students undergoing initial teacher education through a PGCE course, as well as referring to research published in research journals by established and experienced researchers. The inclusion

of examples of student teacher research is intended to both provide exemplars and to illustrate something of the nature of teacher research. For students asked to undertake classroom enquiry as part of a PGCE or similar qualification, these examples can provide an indication of the scale of what is likely to be feasible, and how such small-scale classroom studies can be related to existing literature on aspects of teaching and learning.

This is important given that there are often limited examples of teacher research accessible to teachers starting out on their own classroom-based research. This book therefore draws upon examples of studies published in the *Journal of Trainee Teacher Educational Research*, an open-access journal that, as its name suggests, publishes reports of PGCE students' research studies undertaken whilst on school placement. The text here can only draw upon selected aspects of these studies, to support particular points, but readers can access the full papers from the journal website (<http://jotter.educ.cam.ac.uk/>). Each paper is a (sometimes slightly 'tidied-up') assignment submitted for examination for the PGCE qualification, by a trainee reporting work they had carried out in school during their course.

Getting the most out of this book

The book has been planned to support your reading. Different readers will have different needs, and different learning styles. Not everyone will wish to work through the book from start to finish. However, in writing a book, the best assumption is that material should be presented in the book in the order that the author wants readers to meet it! Writing a book for learners is a pedagogic task, and needs to be planned in a similar way to a lesson or course of instruction. As in classroom teaching and learning, it can be helpful for the author (as a teacher) to be explicit to readers (as learners) about how material is structured. Thus a textbook has a contents list, headings, an index, etc.

In planning this book the major considerations were:

- to break down a complex topic into more manageable 'chunks'. In particular, consideration of methodology is presented separately in the book from a discussion of common data collection techniques, to emphasise the importance of thinking about these issues separately;
- to present these 'learning quanta' in a sensible sequence. In planning that 'sensible sequence' I have largely used the principles of going from the general to the more specific, and of following the sequence in which themes are usually tackled when planning a research project;
- to discuss real examples (of published research studies including student teachers' research projects) to give readers an idea of *the variety* of educational research, and to *illustrate* the abstract ideas raised in the book. There is a vast literature on teaching and learning, so I have selected a few examples of studies that offer a range of approaches, and which provide useful contexts for discussing key points made in the text. The inclusion of examples from trainee teachers' classroom research helps readers in that situation themselves get a feel for the scale and nature of an acceptable student project.

Inevitably, this approach is imperfect. Key points from different chapters are strongly linked, and so I have included cross-referencing forwards and backwards in the text. Some 'jumping around' when reading the text not only reflects the interlinked nature of the subject matter, but is also likely to be a more effective way of learning about the

topic (requiring greater engagement in reading, and also giving opportunities both to review and consolidate ideas already met, and to preview those to come).

In a similar way, understanding the strengths and limitations of research studies requires a consideration of all aspects of how those studies are planned, executed and reported. I have had to bear this point in mind when making decisions about where to locate examples in the text for them to be most effective. Such decisions are inevitably compromises, and to make best use of the examples the reader will need to use the book in a somewhat iterative way – returning to re-examine examples in the light of further reading.

Question for reflection

If the purpose of the book is to inform readers, why does the author keep posing questions for readers to answer?

I have also included a good many ‘reflective questions’ in the text. The suggestion is that at these points the reader stops and considers their answer to the question before reading on. In classroom teaching we often attempt to make learners’ current thinking explicit, to help them see how new ideas might fit into, or extend, that thinking. The same principles can help when learning from a book – although readers are of course at liberty to ignore this device and just read on. (You might, however, first want to think about how you view those learners you teach who habitually want to be told the ‘right’ answers before they have intellectually engaged with the question!) Many of these questions would be a suitable basis for an informal discussion with a colleague who is also learning about educational research.

Finally, the discussion of examples of studies from the research literature in this book *inevitably* distorts and simplifies the original authors’ own accounts. In attempting to draw on these studies as teaching examples, I have simplified them and been selective in which points I’ve considered. (This is what teachers do, to work at the level of their students.) Readers should remember that the papers discussed here that are published in research journals have passed through a strict editorial process, involving peer-review by other educational researchers (see Chapter 6). Despite any flaws, these studies have all been judged to make original contributions to our knowledge of teaching and learning.

Readers of the book will identify the literature that is potentially most relevant to their own projects, and will need to read identified studies critically to appreciate both the strengths and limitations of the research. To prepare the reader for this work, studies with a range of research foci, and differing methodology, have been selected to demonstrate the variety of educational research.

I would suggest that readers might find it useful to use a simple summary sheet to outline any paper they wish to critique, with a set of headings relating to the typical structure of research reports (such as those in Figure 1.1). Then the paper should be interrogated in terms of the key questions and issues that will be introduced in the book.

Such a summary cannot provide full details of studies, but can be a useful framework for getting an overview of what a study is about. Boxes 1.1 and 1.2 provide two examples, giving overviews of two very different educational studies. Reading these brief outlines provides a concise précis of the two studies.

study:

focus:

aim / purpose/ rationale / research questions:

methodology:

- *sample (size, nature):*
- *data collection techniques used:*
- *ethical issues*

analytical processes:

findings:

- *type of knowledge claims made:*
- *how does this inform education?*

Figure 1.1 An outline for summarising the key points in research papers

Box 1.1

Outline of a research study from the *Modern Language Journal*

study: Sagarra & Alba, 2006

focus: learning vocabulary of a second language

aim / purpose/ rationale / research questions: to compare three methods of learning vocabulary (rote memorisation; the key-word method; semantic mapping)

methodology: experimental – learning of 24 new Spanish words, 8 by each of three different techniques. (Order of technique was varied for participants.)

- *sample (size, nature):* 916 undergraduates in a large US university, of whom 778 provided data used in the analysis
- *data collection techniques used:* immediate and delayed post-tests involving matching vocabulary to diagrams
- *ethical issues:* all participants were adult volunteers, who were told the purpose of the research

analytical processes: statistical – results given as means and standard deviations; comparisons made using analyses of variance

findings:

- *type of knowledge claims made:* effectiveness of learning technique – the key-word method facilitated retention more than rote memorisation, which gave better retention than semantic mapping

- *how does this inform education?* could inform second language teaching – ‘when presenting new vocabulary, language teachers can provide learners with a keyword or suggest that they create a keyword to help them remember the new L2 [second language] word’ (p. 239)

Box 1.2

Outline of a research study from *Research in Education*

study: Biddulph & Adey, 2004

focus: 12–13 year old pupils’ perceptions of history and geography lessons

aim / purpose/ rationale / research questions: to find out what pupils enjoyed in history and geography lessons in terms of topics and teaching and learning strategies

methodology: semi-structured group interviews

- *sample (size, nature):* 12 groups of year 8 pupils from ‘a variety’ of different types of schools; each group of 6 pupils of the same gender, but including a range of abilities and levels of interest in the subject. (3 groups for each gender in each of history and geography)
- *data collection techniques used:* pupils were asked to complete a prompt sheet to focus their thinking, before the group interviews, which were ‘recorded’
- *ethical issues:* all pupils were volunteers; interviewing was in same gender groups

analytical processes: not reported in the paper

findings:

- *type of knowledge claims made:* pupils reported enjoying research/authentic problem tasks, group-work, field work, etc., but found making notes and answering questions tedious. Pupils tended not to see any relevance in the subjects to their future
- *how does this inform education?* teachers are encouraged to be explicit about the relevance of the skills used in history and geography, and the importance of developing geographic understanding to issues that pupils would recognise as significant

The importance of criticising (and ‘forgiving’) research

It is important to read research *critically*, carefully examining arguments, and the evidence put forward, to see *if the claims made are supported by the analysis of data presented*. This book exemplifies this by exploring weaknesses and limitations, as well as strengths, in published studies. For the reader who is not familiar with the educational research literature, it could seem that some of the criticisms of studies suggest that these papers have little value.

It is easy to find fault in studies, and we can find ready reasons for this:

- educational research is difficult to do well;
- many studies are severely limited by the available access to classrooms and learners;
- many studies are severely limited by the available resources;
- most research journals have severe word limits on papers, which may prevent authors offering the level of detail they might wish.

The Biddulph and Adey (2004) study, outlined in Box 1.2, does not, for example, explain how transcribed interview data was analysed to derive the findings. However, it is published in a journal that normally publishes papers of less than 4,000 words (shorter than many PGCE assignments), which is restricting to authors. This allows the journal to report more studies, but limits the information available to the reader.

Often an individual study can only contribute in a small way to the development of knowledge. However, that does not mean that it has no value. Although it is important not to accept findings and (especially) authors' suggested implications of their research without examining them critically, it is also important not to completely dismiss a study because it has limitations.

— Research studies and research programmes —

The research literature is cumulative, with each new study adding a little more evidence. Research is always based upon a wide range of assumptions (it has to be) and so each study will involve many choices (where different underlying assumptions and values might lead to different preferred options). The resources available then constrain what may *actually* be done.

So although individual studies may be limited, and even flawed, they may still offer useful insights and relevant evidence that may be 'suggestive' and 'indicative', even when hardly conclusive. Many researchers see their work in terms of research programmes: that is, they have a long-term interest in exploring issues and questions they see as significant, but which are not capable of being 'settled' by a single enquiry. Rather, successive studies are intended to help move understanding forward. Early studies may do little more than help establish the nature of the issue, the most useful definitions, the boundaries of the matters to be studied, and test out the suitability of appropriate approaches to research. The notion of research programmes will be revisited in Chapter 4.

— Research writing as rhetoric —

A second very important consideration is that research in the social sciences (such as education) does not always match the image of 'disinterested' enquiry that is sometimes offered as a stereotype of the natural sciences. Educational researchers may be inspired by issues that link to their personal values. Educational researchers may, for example, be strongly motivated by issues of social justice, equality of opportunity, or (say) the

importance for society of supporting an intellectual elite. When researchers have strong commitments to such principles, then their writing may be intended to be largely rhetorical, to argue the case for the educational policies that best reflect values they feel are important. (Just as a government may have ideological reasons for seeing teaching as a craft that requires on-the-job training to produce skilled workers who are responsible to managers and government agencies, rather than as a true profession where individual professionals are expected to take responsibility for their work, being held accountable by the profession itself.) Such writing will clearly marshal a case to support their arguments.

Perhaps in an ideal world such rhetorical writing will be clearly distinct from research reports that should document empirical studies in an objective fashion, without being reported with any 'gloss' or 'spin'. Even if such an ideal were feasible (if it were possible to be 'objective' in making all the myriad decisions that lead to a particular study having the final form it does), that is not the current state of affairs. Many papers published in respectable research journals offer 'empirical studies' that are clearly biased by such concerns. The use of the term 'bias' may suggest something necessarily negative, but perhaps we should make a distinction between bias as preference and bias as prejudice. Researchers are allowed their preferences, but should not prejudge empirical questions before they have undertaken careful and thorough empirical studies. Phillips and Burbules point out that although we may not consider subjective writing as appropriate in research, it is not sensible to expect research to be value-neutral:

Every enquirer *must* adopt a framework or perspective or point of view. It is a truism that, given this framework or perspective, he or she may see phenomena differently from the way other investigators see them.

(Phillips & Burbules, 2000, p. 46)

The responsibilities of writers and readers

The reader of educational research is invited to 'buy into' the account being provided by the author of a research paper. It is the author's responsibility to make the case for any conclusions offered. However, it is the reader's responsibility to check the argument proposed. An argument's worth depends upon both its logical structure and the strength of the evidence offered. Inevitably, any argument presented in an educational research study will in part depend upon data, and in part upon the interpretation of that data – an interpretation that draws upon the author's own theoretical perspectives. A reader's evaluation of the argument will similarly depend upon the theoretical perspectives that they have developed about the topic.

By the time you have completed the book you should have developed a good basic framework for interrogating studies in order to evaluate them to inform both your own teaching and your own classroom enquiry. You should also be able to apply this framework to recognise the strengths and weaknesses of your own work, and so be able to plan and report work that you yourself would consider competent and informative. At that point you can feel you are ready to be a professional teacher in terms of the 'strong' model of teacher professionalism.

Further reading

The present book only offers an introduction to classroom research, and I hope many readers will wish to take their reading further. This book is also, I believe, unusual, as I have given a lot of space to critiquing specific published studies. This was a deliberate decision, and was intended to support those new to educational research in thinking about how to read research critically. I hope this feature also makes the book more interesting to those who wish to do classroom research, but are not that interested in methodology – as the book is in a sense as much about teaching and learning as it is about doing research. For those readers who find the discussion of studies into these areas of particular interest, there are a number of good books around introducing scholarship and research on teaching and learning. I have suggested several useful titles below.

I also hope that most readers of this book will decide that research methodology is actually an interesting area in its own right, and will want to delve deeper – at least into those aspects linked to their own classroom research. There are a great many texts available, both about educational and social research in general, and about particular methodologies and techniques. A number will be recommended at various points later in the book. Here I am just suggesting three very useful books. The Wilson text goes into more detail than the present volume on a number of important topics, whilst still being written with the classroom teacher in mind. Of the more advanced texts, the Cohen et al. book is a classic text and, whilst written and presented in a more formal style than many other texts, offers a fairly comprehensive overview of education research. Robson's text is very readable and is a favourite of many students.

- Cohen, L., Manion, L., & Morrison, K. (2011). *Research Methods in Education* (7th edn). London: Routledge.
- Joyce, B., Calhoun, E., & Hopkins, D. (2002). *Models of Learning: Tools for Teaching* (2nd edn). Buckingham: Open University Press.
- Moore, A. (2000). *Teaching and Learning: Pedagogy, Curriculum and Culture*. London: RoutledgeFalmer.
- Muijs, D., & Reynolds, D. (2001). *Effective Teaching: Evidence and Practice*. London: Paul Chapman Publishing.
- Robson, C. (2002). *Real World Research: A Resource for Social Scientists and Practitioner Researchers* (2nd edn). Malden, Massachusetts: Blackwell.
- Sotto, E. (1994). *When Teaching Becomes Learning: A Theory and Practice of Teaching*. London: Continuum.
- Wilson, E. (Ed.) (2012). *School-based Research: A Guide for Education Students* (2nd edn). Thousand Oaks, California: Sage.