ACTION RESEARCH in Teaching and Learning

A Practical Guide to Conducting Pedagogical Research in Universities

SECOND EDITION

Lin Norton

Action Research in Teaching and Learning

Practical and down-to-earth, the second edition of *Action Research in Teaching and Learning* is an ideal introduction to the subject, offering a distinctive blend of the theoretical and the practical, grounded firmly in the global higher education landscape. Written in an accessible style to build confidence, it provides easily adaptable, practical frameworks, guidelines and advice on research practice within a higher education context.

The reader is guided through each stage of the action research process, from engaging with the critical theory, to the practical applications with the ultimate goal of providing a research study which is publishable. Supplemented by useful pedagogical research tools and exemplars of both qualitative and quantitative action research studies, this new edition features chapters engaging with teaching excellence and analysing qualitative and quantitative research, additions to the resources section and a new preface focusing more explicitly on the ever-growing number of part-time academics.

Action Research in Teaching and Learning combines a theoretical understanding of the scholarly literature with practical applications and is an essential, critical read for any individual teaching or undertaking action research.

Lin Norton is an Emeritus Professor of Pedagogical Research at Liverpool Hope University, UK.

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I dedicate this book in loving memory of my cousins:

Graham Charles Smith 6.12.1949 – 23.2.2017

and

David Keith Smith 13.1.1954 – 19.11.2017.

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Lin Norton

Foreword

I am delighted to welcome this new edition of Lin Norton's book on action research in higher education. Readers of the first edition will recognize Lin's engaging style which is grounded in her own experience, her questions and reflections.

The hallmarks of Lin's approach lie in her enthusiasm for inquiry and her focus on experiential learning. These two impulses are the basis for a text anchored in concrete examples drawn from her own personal experience of doing research and reflecting on it, and her wide experience in higher education as psychologist, educator, researcher and career developer.

The inclusiveness of this book makes it accessible to anyone working in higher education, not just lecturers. It draws on Lin's experience of supporting pedagogical action research across the range of work in higher education, from full-time educators to support staff, management, and associate staff too. By creating a text that provides such a diversity of practical examples, she also succeeds in demonstrating how action research, in exploring contextual details, invites the reader into other life-worlds and in so doing to discover more about their own. This embrace of diversity also leads Lin into territory not generally associated with action research, but familiar within the science-based traditions, and she successfully demonstrates how tools, designs and approaches from such disciplines may be deployed in pedagogical action research.

The extensive use of vignettes, both real and fictional, the 'points to ponder' throughout the text, and the final summary of each chapter's aims all illuminate for the reader what pedagogical action research looks like. Inquiry is framed as opening up discussion rather than offering conclusions, with conventional ways of viewing a research question often challenged. This new text effectively demonstrates the feasibility of small-scale action research projects for personal, collegial and institutional benefit, and provides valuable support for anyone undertaking action research not only in the university sector, but beyond it as well.

Dr. Ruth Balogh
Associate Senior Research Fellow, Glasgow University
and Lead Co-ordinator of CARN, the international
Collaborative Action Research Network

Preface to the second edition

The principle of pedagogical action research is very clear; it is to improve some aspect of the student learning experience. As in all forms of research, both pure and applied, the ultimate aim is to contribute to new knowledge, but of equal importance is the imperative to change one's practice.

Since I wrote the first edition of this book ten years ago, the pace of change has accelerated in the global higher education sector, posing new demands and sometimes heavier workloads for those of us who work there. Universities face challenges such as financial uncertainty about long-term funding, competing in a global market, meeting students' expectations, satisfying the need for new technologies and taking account of student diversity. At the same time, the importance of the student experience has been foregrounded in many countries across the world. Consequently, there have been quite significant cultural shifts in teaching and learning. The discourse of pedagogy is now more familiar than it was in 2008 to faculty in the disciplines and to other professional staff. Similarly, there is a greater recognition of the need for professionalization as well as continuing professional development in university teaching and learning. This is encouraging for colleagues who are new to university roles and want to learn more about pedagogy as well as for those who are experienced and want to build their career profiles in this field.

My intention in writing this book is to offer a practical, down-to-earth guide for anyone who has a teaching and/or learning support role in universities and who would like to carry out action research in their own practice. Throughout the book, I have adopted an informal personal style, drawing directly on my own experience in carrying out and promoting this type of action research. My purpose has been to illustrate the feasibility of pedagogical action research even when other academic demands are pressing.

In personal terms, my ongoing exploration of action research in the intervening years and indeed the very act of rewriting and updating this book has led me to re-examine my own approach. I began with the notion of doing action research focused on teaching and learning at university level, because as a psychology lecturer I was strongly motivated to do all I could to help students

be successful in their studies. Since that early start, my career developed from a university teacher to an academic staff developer and I moved out of psychology into education. Because of my early psychology training, I sometimes use methods in my action research studies that draw on positivist principles that do not feature frequently in the action research literature. I also find myself balancing the role of the academic with that of the practitioner, and the teacher with that of the academic staff developer. The combination of these different roles inevitably exerts tensions that are not always easy to resolve. I deal with it by endeavouring to hold steadfastly to the aim of enhancing students' learning experience. Everyone's experience is different but I hope that this book will illustrate that we all are likely to face similar dilemmas. In a way, this is one of the reasons why doing pedagogical action research is so engaging and deeply fascinating.

The book is organized into two sections: the theoretical and the practical, either of which can be read independently. If, however, you would prefer to get on with the practical aspects of doing an action research study, a good starting point is Chapter 5. In a practical book you may wonder why I have chosen to begin with a more theoretical focus, especially when action research itself tends to start with the practical. The theoretical chapters are about the context of learning and teaching in higher education, rather than theorizing action research itself, which has already been written about extensively. In a sense, my theoretical chapters are essentially concerned with the practical, as I want to explicate some of the complexities and challenges involved in doing this kind of research. The context in which I write is the UK university setting, so where relevant I have explained and defined UK practices and drawn as widely as possible on international literature.

In this first section, which comprises Chapters 1 to 4, my intention is to make a convincing case for carrying out pedagogical action research in the context of changes in the Higher Education sector. I have spent some time on this as I have found that there is still an uncomfortable divide between research and teaching, in which the former is more highly rewarded. Not only this, but some types of research are privileged over others. This means that you need to be able to justify and defend any research and/or pedagogical activity, which might not be recognized as mainstream. In-keeping with my overall aim of writing a practical book, I have incorporated some 'points to ponder' in each of these chapters. In the second section, I have written essentially a 'hands-on' practical guide to enable you to carry out your own pedagogical action research study. In each chapter, I suggest some activities and recommend further resources, if you want to explore further.

Throughout the book, I have used the device of fictionalized case studies or vignettes, constructed and embellished from real issues, to bring to life some of the difficulties we face and decisions we have to make in carrying out our action research projects. I have also included actual case studies and reflections that some of my colleagues have generously contributed (see Acknowledgments).

I am deeply grateful to them as they provide illustrations other than those from my own experience as an academic psychologist.

I hope in reading this book, you will have caught some of my enthusiasm and commitment to this type of research. I wish you the very best of luck in your own pedagogical action research journeys.

Lin Norton
2018

Chapter 1

What does doing pedagogical action research mean in the current higher education context?

Introduction

In this chapter I begin with a brief consideration of what pedagogical action research entails. I follow this by exploring the context that we work in and how this might affect our decision to carry out some form of pedagogical action research study. I use a personal example of my early research that will show how we can make significant pedagogical changes even if we start from fairly humble beginnings.

What is pedagogical action research (PedAR)?

Pedagogical action research involves using a reflective lens through which to look at some pedagogical issue or problem and methodically working out a series of steps to take action to deal with that issue. The fundamental purpose of pedagogical action research is to systematically investigate our own teaching/learning facilitation practice with the dual aim of modifying practice and contributing to theoretical knowledge.

A personal anecdote

Many years ago when I was a new psychology lecturer, initially appointed on a one-year contract, I was full of enthusiasm and love for the discipline. At the same time, having struggled myself as a mature student, I was keen to help the students I taught to avoid some of the pitfalls that I had encountered; the main one being that simply working hard is not enough to guarantee academic success. You need to also work in the 'right way'. My own lightbulb moment about the 'right way' came when I realized that an academic degree requires independent thinking rather than faithfully reproducing others' views. Although I did not know it at the time, I had stumbled on the difference between a surface and a deep approach to learning (Marton and Säljö, 1976).

This personal learning experience fuelled a lifetime commitment to helping students to learn. Although I cannot remember the exact chronology, it was

fairly early on in my academic career as a lecturer that with the help of an enthusiastic colleague I ran an 'Approaches to Learning' programme for first-year psychology students. We developed this initiative from an earlier workshop programme designed to help students understand what was required of them in studying psychology at degree level. Its aim was to raise students' metacognitive awareness of their own learning processes and actively encourage them to take a deep approach to their psychology studies. The effectiveness of the programme was reported in a journal paper and a book of conference proceedings (Norton and Crowley, 1995; Norton and Dickins, 1995).

As well as the formal dissemination, we also presented our project in seminars to colleagues within our institution. This led to my collaborating with a colleague from theology, who ran a similar programme and together we produced a tutor pack to help colleagues in other disciplines teach in a way that encouraged students to take a deep approach to their learning (Norton and Scantlebury, 1995). Reflecting on this undertaking, I can see how one small step motivated by my own student experience led to many more steps and how the whole process became widespread across the institution.

Because of this experience, I am a great believer in taking small steps and seeing where they lead us. This can be really effective for all of us who are new to pedagogical action research, no matter what stage of our academic career we are at. All we require to begin is an interest in how students learn and a readiness to explore and reflect on the effects of our teaching and assessment practices. How students learn is not, however, straightforward. It needs to be seen in terms of our students' characteristics and the higher education context in which we operate.

Student profiles

The profile and number of university students has dramatically changed over recent years across the globe. The British Council's analysis (2012) of higher education global trends indicates the fast-paced growth in international enrolments in the UK. There is also an increasing number of mobile students who choose to study at higher education institutions in countries other than their own. This has significant implications for how we teach our students, as a significant and increasing percentage will come from different countries. We need to think beyond the language challenges they may face. Providing courses in English for academic purposes is one response but it does little to help those from an educational background where the learning environment is quite different. International students may have experienced very different teaching approaches and be unfamiliar with their chosen university's assessment requirements (Cook and Norton, forthcoming).

There is also the issue of diversity. This comes in many forms and would include characteristics such as age at entry, gender, sexual orientation, culture, ethnicity, religious beliefs, disability, work commitments and family responsibilities. Each of

these categories implies further variability rather than any homogeneity. This growing awareness of the changing make-up of the student body suggests that more needs to be done in terms of the inclusivity of our teaching (see for example Gibson, 2015; Hockings, 2010; Mountford-Zimdars, 2015). I found these three references on a useful site provided by Plymouth University (n.d.) on inclusive teaching and learning research that suggests resources, research and reports for several specific groups of students.

Students as adult learners

More generally, when thinking about our students it might be helpful to consider the characteristics of adult learners. Malcolm Knowles was an American educator who was credited in the early 1970s with arguing that adults and children learn differently. In his theory of adult learning that he called andragogy, he made five assumptions about the characteristics of adult learners in terms of their:

1. self-concept which moves more towards being self-directed;
2. experience, which is described as a 'growing reservoir' that becomes their resource for learning;
3. readiness to learn that becomes orientated to the developmental tasks of their social roles;
4. orientation to learning that shifts from subject-centeredness to problem-centeredness;
5. motivation to learn that becomes internal.

Knowles has written extensively on the adult learner and principles for effective teaching (see for example Knowles, 1970, 1973, 1980, 1984). His work, although critiqued, has been widely used in various educational settings as well as in business and training areas. From our perspective his work is useful as it encourages us to think about teaching that is more active and experiential to align with the learning needs of our students.

All university students are adult learners, but those who are defined as mature (being 21 or over with a gap between school and university) face additional hurdles in being successful at their studies. A South African study by Abrahams (2014) illuminates some of the challenges they may face. He was interested in the trajectories and transitions in higher education of what he called working students. As part of a larger action research study, he interviewed a sample of part-time students in political studies. One of his main findings suggested that universities' support for these students might be limited by a failure to understand their complex trajectories in higher education. Instead of a traditional linear transition into higher education usually demonstrated by traditional students, these mature students are more likely to have paths that are less linear and more complex, and may well stop and start. This study is just one example but it serves to highlight the need for more

research to begin to understand mature students' actual experiences. Knowing more about how our students approach their studies and what is important to them (not to us as teachers) could be the basis of such a pedagogical action research study, as illustrated in the following vignette:

Janet: assumptions about students

Janet was a high-flying Cambridge graduate, who found no difficulty in studying and who obtained a first-class degree in theology. Janet came from a public school background and although acutely aware of her own privileged circumstances, she was relatively unaware that students might struggle with learning. In her commitment to serve God, Janet decided to teach in a small theological college which offered degrees to mainly mature students from a wide variety of theological backgrounds and countries. Janet loved working with such a wide mix and felt genuinely inspired by their dedication to their calling but she was rather disappointed by the standard of work in their written assignments. Deciding that the problem was lack of practice in academic writing, she decided to incorporate writing sessions into the curriculum designed to help her students and was excited about her initiative. Discussing it with a colleague, she was surprised when he suggested that before embarking on a remedial course of action, it might be a better starting point to actually find out what her students thought their difficulties might be. She thought about his suggestion and decided to carry out an action research study, the first step of which was to hold focus groups and interviews with volunteer students. One of her initial findings from this cycle revealed that the students' biggest challenge was taking the required academic critical approach to texts that they found sacred. Taking this as her starting point, Janet decided to read the literature about pedagogy in theology and thus informed, she intends to carry out a second cycle, in which she will hold seminars on the tensions between faith and an academic approach to study.

In this vignette, we can see how an action research approach helped Janet to see the difference between her own assumptions about her students' difficulties and their actual experiences. While she thought the problem was a study skills issue, her students were experiencing the more fundamental stumbling block of critiquing sacred texts. This type of enquiry might well help Janet to reassess her own approach to enabling students to learn. Although this is a hypothetical example, it is founded in work I have done with theological academics who have raised similar issues. A more general observation of not taking account of the student perspective comes from my experiences of having sat in countless

departmental meetings as well as many detailed curriculum planning meetings. A common thread in these events is that teams of staff are constantly theorizing about why and how students are performing or not performing to the level expected. It is very rare that even one student is present at such meetings, so we continue to make assumptions about them. An action research approach would ground such theorizing with some evidence. Recently, for example, there has been an encouraging move to involve students more as partners in all aspects of curriculum planning (Bovill, et al., 2016) and assessment (Deeley and Bovill, 2017). If we were also to involve the same students as collaborative action researchers we would have a sound basis for a pedagogical action research study.

Janet's vignette is also an example of pedagogical action research which encourages us as academics to be reflective practitioners. This involves us engaging critically with the pedagogical literature. Action research contributes to reflective practice as we begin to conceptualize pedagogical issues as 'wicked problems'. Ramaley (2014) coined this term to signify issues for which there are no simple, easy answers but many, each of which have value. In Janet's case she realized that what she had thought was the problem was actually something else. By reading the literature and reflecting on the implications of the findings from her interviews, she may come up with not one potential solution but several. Testing solutions could form part of an ongoing action research cycle.

Points to ponder

1. Without thinking about it too much, write down five words or phrases that you would use to describe your students.
2. Looking at your list, what might this tell you about some of the assumptions you might make about students?

The higher education context

Universities are currently being forced to compete for students in a climate where the student is customer and the measures of quality are performance-based (Burke, Stevenson and Whelan, 2015). In this section, I will be looking at the issues around defining teaching excellence and how it can be demonstrated. I will also question whether or not there is a demonstrable link between excellent teaching and improved student learning. The introduction in the UK of the Teaching Excellence Framework (TEF), in which the Government will be monitoring and assessing the quality of teaching in English universities, is the context in which I write. My argument is that while action research has an important role to play, we have to use it in a way that looks beyond the forces of techno-rationalism and metrics. Like McNiff (2016), I believe that those of us who work in higher education can use action research as a way to listen to other

views as well as to critique our own approach. Biesta (2007) argues for research approaches that are thoughtful in engendering practices and beliefs that are 'educationally desirable' and driven by moral values. Fitzmaurice (2010) contends that the growing attention and focus on learning and teaching in higher education may push us to a concept of teaching that has been reduced to a set of competencies. Thinking of teaching as a professional practice enables us to move beyond a mechanistic view of teaching to a broader conception that 'takes into account the complexity and contextuality of the work, and the importance of virtuous dispositions and caring endeavour in teaching.' (p.54).

It is easy to feel somewhat disillusioned by the way that higher education appears to be going in the 21st century. The prevalence of market forces, accountability, metrics and increasing student consumerism are described by Brown with Carrasso (2013). Despite these drivers, we still retain a certain amount of relative autonomy (Darabi, Macaskill and Reidy, 2016). As this book is about pedagogical action research, I suggest that this is one approach we can use to exercise some autonomy in our own practice. To illustrate how this might work, I will use the 'micro-meso-macro' frame of reference, frequently used by researchers. Fanghanel (2007) described these levels in terms of filters in a higher education environment:

1. The micro level, meaning internal factors affecting the individual lecturer
2. The meso level, incorporating the department (or equivalent) and the subject discipline
3. The macro level, which includes the institution and external factors.

More recently Simmons (2016) has suggested there should also be a fourth level when looking at the impact of the scholarship of teaching and learning (SoTL) in improving learning in Canada:

4. The mega level, meaning the provincial and national context.

When our students are not learning or performing as well as we would hope, it can be tempting to blame the rapidly-changing higher education context, or indeed students themselves. But this stance will not help to move us on in improving our practice so that our students have a better and more satisfying learning experience. Whether we are relatively new to university teaching, or have had many years of experience, the chances are that each of us will have identified some aspect of our students' learning that we would like to change.

Consider, for a moment, the following three fictional examples:

1. Andreas is concerned about improving work placements for his engineering students (micro level).
2. Brendan and Barbara are working across departments to help students make links between the careers service and their degree programme (meso level).

3. Caroline is increasingly concerned about the real learning benefits of digital technologies in spite of being an active digital learning champion (macro/mega level).

These different examples all start with academics examining the current state of affairs in their professional practice. They want to bring about some form of change but they are operating in different levels. Each of these examples will be explored in more detail to illustrate how some of the challenges play out. I shall begin with the micro level: concerned with factors that affect us as individual academics.

The micro level: why carve out a career in learning and teaching?

Case study 1. Andreas: looking for a pedagogical niche

Andreas has been appointed as a postdoctoral teaching fellow in civil engineering. After much thought, he has made the move from Spain, where he successfully obtained his PhD, to an English university which is research intensive. Although this is a risky move as it is only a two-year contract, career openings are limited in his own country so Andreas feels he is getting 'a foot in the door'. After a year, he is beginning to worry. He feels he is less valued than others in the department and that his subject specialism of soil mechanics is not mainstream enough to help him establish a strong enough research career. A turning point came when he attended a learning and teaching conference organized by a neighbouring university with a strong reputation in employability and met some fellow engineers who had made quite a name for themselves in engineering education.

Inspired by this encounter, Andreas begins to think about his third-year students and why they seem to struggle applying what they have learned from their site visits to his course. Andreas is ambitious and wants to write a book on the subject, but his PhD mentor advises him to start off with a small action research study to find out where it takes him.

Andreas is an example of an increasingly common type of academic throughout the world. As a casual lecturer, he is on a short-term fixed contract, with no guarantee that it will be extended. For anyone who is in this situation, it is important to think of building up a career plan and an emerging career identity. Building an expertise in the pedagogy of the subject through pedagogical action research might be one element in such a plan. This is what Andreas has decided to do and it gives him a second string to his bow. It may ultimately lead him to

a career in higher education learning and teaching (for example in academic or educational development or in management). The situation of casual or sessional lecturers is discussed further in Chapter 4.

The meso level: what influences do our academic departments/schools and disciplines have on our teaching practice?

It is some years since Becher (1989) coined the term 'academic tribes (academic cultures) and territories (disciplinary knowledge)'. In the second edition of *Academic tribes and territories: Intellectual enquiry and the culture of disciplines*, more emphasis was put on learning and teaching practices (Becher and Trowler, 2001). Today, the influence of these disciplinary groupings is still extant although they are more nuanced than the simplistic homogeneous categories they were. The implication is that university departments tend to guard their territories quite fiercely, so it would be uncomfortable if, for instance, I was to find myself in a psychology department where they only do large-scale statistical research and the teaching is exam based. While this was not actually the case in my own career, what I did find was some considerable tension between my academic role as a psychology lecturer and my research interests in learning and teaching. I have documented these in an account for the Collaborative Action Research Network Bulletin where I was writing about the challenges of aligning the personal, the professional and the political when doing action research (Norton, 2018). One of my main reflections in this piece was about how hard it was when I was trying to establish myself as a credible psychology lecturer in an institution where research was one of the strategic priorities. At that time, pedagogical research was not seen positively and pedagogical action research even less so.

Over the years, the situation has not changed very much. Kneale, Cotton and Miller (2016) carried out a desk-based analysis of the Education Unit in the earliest iteration of the Research Excellence Framework (REF) (2014) which showed that higher education research and impact studies formed a low proportion of the research studies and the impact case studies. In the UK, the REF is vitally important as the results determine how much research funding institutions will receive. The indications are that pedagogical research is not viewed as prestigious. If we do decide that this is a path we want to go down, then we have to be clear-eyed about the consequences and our overall career ambitions. Action research might not be seen as the best way to build a research profile but there are very many outstanding exceptions such as Jack Whitehead, Jean McNiff, Bridget Somekh, John Eliott, David Coghlan, Susan Noffke and Peter Reason, to name but a few. Regardless of our potential track record, we may decide to do it anyway for the many other advantages it offers us. Working across the boundaries of our departments might be one such benefit:

Case study 2. Barbara and Brendan: working across departments

Barbara is an experienced lecturer in English literature, her speciality being women Victorian poets. For several years, Barbara has worried that her graduates tend to be blinkered in their choice of career, thinking that their only options are becoming teachers themselves. Since this was her own professional career route, Barbara feels that she can offer little advice until by chance at a coffee break she finds herself sitting next to Brendan who works in the Careers service. When she tells him about this difficulty she is quite surprised and excited to hear that there are many careers that English literature graduates take up, including public relations, journalism, marketing, advertising, curator, archivist and many other roles in the media industry. She invites Brendan to talk to her final-year students and the event is a success, according to the student evaluations. Reflecting on these, Barbara and Brendan see some scope in developing this one-off event into something that will have a sustained effect on their students. Together they begin to think of extending the initiative into a programme that embeds employability opportunities into the Literature curriculum. Convincing their relative heads of department takes some time, but the deciding factor appears to be their commitment to evaluating the effectiveness of the programme in a combined research study that will be presented at the university learning and teaching day. The presentation is a success and Brendan and Barbara are able to carry out further cycles of action research involving colleagues from different departments who can see value in their model.

Barbara and Brendan's case study is an example of the rich cross-fertilization of ideas that can happen when colleagues from different subjects work together to cross disciplinary and departmental boundaries (Kreber, 2009). It is also an illustration of how a small idea, if backed up by research evidence, can rapidly spread into a much bigger network, but it can take persistence and faith. This is one of the reasons why action research with colleagues can be more successful than trying to work alone. Barbara and Brendan not only share their professional knowledge but motivate and support each other to carry out research.

Another opportunity that action research offers is that of questioning the mores of departments, for example,'that's the way we have always done things around here'. In some cases action research goes straight to the heart of how our disciplines are taught and assessed. Why, for example, are essays and exams still such a staple diet of assessment in so many subjects (Norton, Norton and Sadler, 2012)? In making these comments about the effects of the discipline, I am aware that in countries such as the USA and Canada, for example, the curriculum is much more broadly based than focusing on a single discipline. However, the hold that a disciplinary approach

and our educational background exert on us can be considerable. I agree with Poole (2010) when he says, 'I see the world through the eyes of a psychologist' (p. 56). As a psychologist myself, this is manifest in the way that whenever I write or talk about pedagogical action research I am always looking for a demonstration of evidence before making any claims. This inevitably affects how I have carried out my action research studies. We cannot rid ourselves of these ways of thinking as they have become ingrained, but we can be open to learning from other disciplines, which is one of the advantages I have seen when teaching on PgCert programmes or facilitating workshops. Regardless of what I was presenting, the most productive times were when colleagues from different subjects had the opportunity to talk through learning and teaching issues and share their own practices.

Questioning the conventions and traditions of our disciplines and/or our departments is not always an easy thing to do, but engaging in action research may lead us to think about ways in which matters might be changed. Adcroft and Lockwood (2010) suggest that attempting to establish a culture of teaching and learning can work better if it is bottom-up and emergent than managerially driven. They say that three principles are involved: i) there is more to the scholarship of teaching and learning than what happens inside a classroom setting or a purely technocratic understanding of pedagogy; ii) it is more of a behavioural and cultural movement than a departmental one, and iii) it involves facilitating and encouraging communities of practice.

Points to ponder

1. What issue might you think of that others in your department, or beyond, might be interested in researching with you?
2. What are some of the practices in your discipline that you feel uncomfortable about?

The macro/mega level: how do the institution and the university sector affect us?

When considering this level, we cannot escape the most recent changes that are affecting the higher education sector. These include global competition and league tables, quality assurance and accountability, the consumerist student and controversies around the demonstration of teaching quality. Related to these changes is the concept of teaching excellence.

Teaching excellence

The university context is a fast-changing environment, which puts competing pressures on us including the need to be excellent at teaching, research and

administration. More recently, we have been urged to prepare students for employment and to be entrepreneurial in a global market. Universities are currently being forced to compete for students in a climate where the student is customer and the measures of quality are performance-based (Burke, Stevenson and Whelan, 2015). Inevitably, attention has been centred on teaching quality with the concomitant requirement of metrics and league tables. In England, the introduction of the Teaching Excellence Framework (TEF) was in part intended to redress the balance between teaching and research with greater rewards for teaching (McNay, 2017). The UK Government has opted for a metrics approach that incorporates teaching quality, learning environment, student outcomes and learning gains (Department for Business, Innovation and Skills, 2015). There has been much debate in the literature about teaching excellence as a concept and how we should demonstrate it. In an interview study with senior academics from 11 universities in England, Burke, Stevenson and Whelan (2015) found that the discourses of teaching excellence identified in their participants' interviews were concerned with neoliberalist market-oriented objectives and increasingly the adoption of rigid assessment frameworks. A disturbing implication of their research is that such discourses may have unintended consequences of affecting widening participation and equity goals. Frankham (2017) suggests that the effects of the TEF on performativity have the obverse effect of not preparing graduates for the workplace. Not all authors are negative. Hayes (2017), for example, suggests that the TEF being a major educational policy could lead to a change in attitude to international students and contribute to their more equal status. Wood and Su (2017) carried out a small study with 15 academics from five post-1992 universities. They concluded that the concept of teaching excellence needs to be more nuanced. The interrelated nature of teaching and research needs to be recognized and the focus on outcome-related measures needs to be rebalanced by considering the purposes and development of learning.

Points to ponder

1. How would you define teaching excellence?
2. How do you think it should be demonstrated?

Regardless of the pros and cons of this specific governmental driver in the UK, we have to accept that across the globe we are working in a higher education context where the profile of how we teach has been raised. While this in itself must be a good thing, we also have to guard against teaching excellence being reduced to a standard list of competencies. The next case study illustrates this dilemma.

Case study 3. Caroline: concerned with teaching excellence

Caroline is an associate professor of geography as well as being the director of her university's academic practice centre (APC). In this role she has responsibility for a small team of educational developers, as well as several digital learning experts. This reflects the sizeable financial commitment the university has put into digitally enhanced learning, which her vice-chancellor is particularly keen on. Consequently, the university's PGCert programme is built around teaching and learning with technology. There is also a route into a masters and a professional doctorate for those who want to proceed further. In addition the APC runs continuing professional development programmes which all academic staff are expected to undertake.

In spite of such a powerful institutional drive and a ready take-up by many (although not all) of the teaching staff, the academic performance of the students appears to be declining and colleagues are complaining that students do not seem to bother any more with what they call vaguely 'real learning'. Student satisfaction scores are very high so senior management is pleased but Caroline is worried at the undercurrent that is rumbling among the academics. Taking her team and some trusted colleagues into her confidence, Caroline suggests a series of interlinked action research projects to try and get to the underlying problem. An early finding from a Geography colleague found that the enthusiasm students had for digital technologies was more to do with practicalities of time and convenience rather than any indication that they used them to deepen their learning. Armed with this knowledge, Caroline suggested an institutional drive where interested colleagues could become involved in their own pedagogical studies, helped by APC's experts. The aim was to explore ways to encourage deeper engagement with learning. After two years, and several presentations and reports to senior management, the university devises a new learning, teaching and assessment strategy to take forward the understandings and lessons learned from the action research initiative.

In this case study, Caroline had the courage to face some uncomfortable truths and by taking action in a collaborative and participatory way was able to bring about institutional change. In enabling staff to carry out research in their own subject contexts, she was able to gain a broader sense of why students were not engaging with the curriculum despite all the affordances that modern technology had brought them. This example is an illustration of what might be achieved at institutional – and even beyond to national – level when we can establish working partnerships.

Working partnerships can be more formally constituted. Roxå and Mårtennson (2011), for example, take a sociocultural perspective and introduce the concept of academic micro-cultures in their work on academic development at Lund University. They define these micro-cultures as a department, a workgroup, or a disciplinary community but what characterizes them is high internal trust and intense communication. Similar to Wenger's (1998) communities of practice they are an example of how bottom-up approaches can influence institutional strategy. Communities of practice have had a powerful effect on learning and teaching in universities as well as in many other organizations. The history and development of the concept is presented on the Wenger-Traynors' website. Here we can find the following definition:

> Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.
>
> (Wenger-Traynor and Wenger-Traynor, 2015)

What Caroline has done through action research has joined up these micro-cultures to the macro level of her university. Of course she is in an advantageous position of being in middle management but nevertheless, joining up communities of practice or micro-cultures has been shown to be influential at an institutional level and beyond.

Implications

Having now explored all three/four levels and shown how action research might operate in each, I want to return to my main argument, which is that in a context of accountability in teaching and learning we need a 'bottom up' approach. By this I mean that as academics (established or aspiring) we feel enabled to take ownership of our own professional development in pedagogy. One way to do this is by pedagogical action research which encourages us to become reflective practitioners and to engage critically with the scholarship and literature of teaching and learning. It is through doing research that we begin to understand more about our own teaching and assessment practice. Action research also gives us the opportunity of working collaboratively to grow initiatives and begin to challenge and perhaps change established practices. All this must seem like a long way off if we are thinking of taking that first step. A good starting point is to consider our own educational beliefs and values. I have been influenced and motivated by the work of Gert Biesta who is a professor in education in the UK. One of his publications that has influenced my thinking about action research is an essay in which he critically analyses the concept of evidence-based practice in the field of education. Biesta argues that professional action as implied in evidence-based practice requires professionals to ask questions...

> not about the effectiveness of their actions but about the potential educational value of what they do, that is, about the educational desirability of the opportunities for learning that follow from their actions (and what should be prevented at all costs is the situation in which there is a performative contradiction between what they preach and what they practice).
>
> (Biesta, 2007, p.10)

Points to ponder

1. Why did you come into higher education?
2. What do you think is educationally desirable and how does this align with your own moral values?

If we are to take the step of researching our own teaching practice, then we must reflect on our beliefs and values about higher education in general. Our position may well put us in the uncomfortable zone of being outside the current educational zeitgeist, but one of the avowed intentions of action research is to challenge the status quo of the particular educational system that we work in. Kemmis (2006) has argued that some educational action research lacks edge and that it should be capable of 'telling unwelcome truths'. While he was referring here to the school system, he has also talked about the higher education context elsewhere (Kemmis, 2001) so it is not surprising that this maxim applies equally well to higher education.

Pause for a moment and consider an occasion when you have had to abide by a practice that just does not chime with your pedagogical beliefs or values. This can happen at the institutional or the departmental level or it may come from the discipline itself. Often it pertains to curriculum design and/or assessment practices. It is unlikely that on your own, particularly if you are new to the department or are part-time, that you would feel that your voice might be heard. Having mentored early career lecturers, I have empathized with their frustrations and while there is no easy or straightforward solution, exploring alternative ways of teaching and assessing through action research might enable you to have a credible mechanism for telling unwelcome truths. This is part of what being a reflective practitioner entails, which will be the focus of my next chapter.

Synopsis

- In this first chapter I have taken as my starting point the various influences, demands and expectations that face those of us who work with university students. Until we reflect on the effects of these influences,

we will not be able to make our pedagogical action research as robust or as influential as we would wish it to be.

- In discussing the micro-meso-macro/mega framework, I have used the device of case studies to describe some of the more common contexts that readers will be familiar with and to explain how this may sometimes pose challenges and frustrations that cannot always be resolved.
- Throughout the chapter, I have posed some points to ponder, to help you to think about your own values, experiences and ambitions. Even if you do not wish to engage with these natural pauses for thought, my intention has been to portray an honest account of what undertaking pedagogical action research can and cannot do.

Chapter 2

Why is reflective practice important?

Introduction

Having described some of the complex issues and factors that face us in higher education, I want to consider in this chapter why it is important to be a reflective practitioner. In my discussion I will draw from the literature as well as from my own experience. As a practitioner-researcher, I feel that reflection is fundamental to the whole process of carrying out a pedagogical action research study. The concept itself is conceptualized in many different ways for many different purposes. I will explore some of the more mainstream views of reflective practice and show how it fits with the cycles of carrying out an action research study. Some of the research I cite is from different sectors. The studies are also not limited to those carried out in the UK; thus I hope to show how similar issues are not confined to one context but are widespread.

What do we mean by reflective practice?

To be a reflective practitioner intuitively seems to be a 'good thing', but what does it actually mean? The term has come to us from the work of Donald Schön (1983), whose book *The Reflective Practitioner* is generally regarded as a seminal work. His argument was that no matter what our profession is, we all need to reflect. This is because we will inevitably be faced with new situations or problems for which we were not specifically trained. He defined reflective practice as the practice by which professionals become aware of their implicit knowledge base and, in so doing, learn from their experience. Schön makes a distinction between reflection *in* action, which is reflecting on one's behaviour while it is actually happening and reflection *on* action, which is reflecting after the event by reviewing, analysing and evaluating the situation. Reflection in action is a feature of action research, as well as the more commonly used reflection on action, where we reflect on our findings. Reflection in action research means that as we are engaged in the research process itself, we are also reflecting on it and possibly changing its direction. Some years ago I carried out a collaborative action research study with six students who were taking a module

on teaching and learning in higher education as part of an MSc in applied psychology (Norton, Aiyegbayo et al., 2003). My original aim was to enhance their metacognitive awareness of themselves as learners using an instrument called the Reflections on Learning Inventory RoLI© (Meyer, 2004). I asked them after each class to apply what they had learned in each session to their understanding using their learning profiles from the RoLI©. Fairly soon into the research process, it became clear that this was too big a conceptual demand for them. I changed the research design to a simpler process where they sent me weekly reflections on what they had learned. Cook (2009) uses the term 'a messy turn'. She argues that action researchers should delve into the 'messy area' where we do some difficult thinking that might disrupt our ways of thinking and what we think we know. In my study, I was mistaken in thinking that a regular reflective task would increase students' metacognitive awareness. I describe this study more fully in Appendix H and the RoLI© in Chapter 9. I had not until this point really thought about critically interrogating the concept of metacognition, having always seen it as a lynchpin for what I believe learning to be about. This insight relates to another important term that Schön introduced: 'knowing in action', to describe tacit knowledge.

Reflective thinking and Schön's concept of the reflective practitioner in both his original book and in his later book *Educating the reflective practitioner* (Schön, 1987) has had widespread currency in higher education. Much of this is due to the work of Brockbank and McGill (1998) who took up his ideas and argued that reflective practice should be seen as a core element of university teachers' work, not as an optional extra. They argued that reflection has benefits not only to the teacher for thinking about how to improve their own practice but also for the students, as teachers will be modelling the reflective process for them. This latter point is important, since reflection is frequently featured in vocational programmes and yet it is not an easy thing for students to do as it involves abstract thinking rather than practical learning.

The roots of reflective thinking can be traced back to the work of John Dewey (1910). Dewey was an American psychologist, philosopher and educator who was arguably the most influential thinker on education in the 20th century. Rodgers (2002) in a helpful analysis goes back to Dewey's (1933) conception of reflective thinking and distils them into four characteristics:

1. 'Reflection is a meaning-making process . . .'
2. 'Reflection is a systematic, rigorous, disciplined way of thinking, with its roots in scientific inquiry.'
3. 'Reflection needs to happen in community in interaction with others.'
4. 'Reflection requires attitudes that value the personal and intellectual growth of oneself and others.' (p.845).

In discussing each of these characteristics in depth, Rodgers brings much-needed clarity to our concept of reflective thinking. The characteristic that might surprise

some readers is the third one which emphasizes reflection by interacting with others. Sometimes reflection is conceived of as a private, introspective process. By discussing our insights with other people, however, we are able to bring to the surface tacit assumptions, values and beliefs about education that might otherwise remain hidden. This is a fundamental point when it comes to doing and disseminating action research (see Chapter 11) where I will argue that we must open up our findings and their implications to peer scrutiny and challenge.

Points to ponder

1. What do you do when you reflect on your teaching and your students' learning?
2. How often do you reflect with other colleagues? If you do not do this, what do you think is holding you back?

Collaborative reflective practice and action research

Considering that there are pitfalls of introspective reflection, we should bear in mind the advantages of collaborative reflective practice. This occurs naturally in collaborative or participatory action research studies. As Kember (2000) says:

> Employing an action research approach does not guarantee a change in beliefs. Action research projects, though, do at least provide a mechanism for perspective transformation through regular meetings with participants. (p.32)

Reynolds and Vince (2017) make a similar point. They suggest that rather than individual reflection, there should be more emphasis on 'creating collective and organizationally focused processes for reflection'. Support from each other and working in a group can be motivating. It allows for a number of different research experiences and perspectives to add to the overall project. It may help to ensure that our research and improvements continue through strategic thinking and approaches, which is not always the case when working alone. It also has the advantage of minimizing some of the problems that can occur with individual reflective practice.

Kember (2000) likens collaborative action research to action learning, which was founded by Revans (1982) and initially used in industry. Action learning is frequently used as a tool for training and problem solving in many different settings including education. The basic premise is that individuals in a learning set which meets regularly develop questions from their experiences at work in order to find potential solutions. They do this through a cycle of identifying the issue and implementing a course of action, monitoring the effects, refining the

action, re-testing and so on. In this respect it is very close to action research. Kember describes action learning and action research as poles of an action spectrum. Both have the same assumption that learning is predicated on active experience, and improvements come about through cyclical processes. They also both share the practice of collaborative reflection. One of the great advantages of working together as opposed to working individually, according to Revans, is that an individual can only work effectively to solve those issues, problems or dilemmas over which that individual has some power to change. Collectively, the power is greater. This aligns with my previous discussion of micro-cultures and communities of practice in Chapter 1.

Where action research and action learning differ is that the former is a methodical, systematic and rigorous process of enquiry in which the results are disseminated to peers, whereas the latter may not involve gathering data but relies instead on personal observations and reflections. While action research is almost always an action learning project, the converse cannot be said to be true of action learning which does not have to involve systematic research. It can, however, be used as a preliminary stage to an action research study; this is sometimes called the reconnaissance phase of the action research cycle (Kemmis and McTaggart, 1988).

How can reflection with our colleagues be achieved? One way is through actually doing a collaborative action research project, but there are other approaches such as connecting through the websites of action research networks. The Collaborative Action Research Network (CARN) was founded in 1976 and supports action research at individual and local level as well as nationally and internationally, having partners across the world: www.carn.org.uk/?from=carnnew/. Balogh, McAteer and Hanley (2017) reflect on CARN's history as a developing network and suggest that it can offer opportunities for networking that combine face to face with virtual contact. In one of her more recent books, Zuber-Skerritt (2017) has edited a collection of chapters exploring the potential of learning conferences to stimulate networking and sustained discourse. She cites as an example the long conference history of the Action Learning and Action Research Association (ALARA) www.alarassociation.org/, an international association developed in Australasia which has been functioning for over 25 years (Zuber-Skerritt and Passfield, 2017).

Some limitations of reflective thinking and reflective practice

Reflective thinking is a term which has been somewhat over-used and under-interrogated (Knight, 2002; Griggs, Holden, Lawless and Rae, 2016). Part of the difficulty is that there has often been an unquestioning and somewhat rhetorical or reified use of the term. Perhaps this is not surprising given its apparent simplicity. One of the problems, however, is the terminology itself,

which is fuzzy and ill-defined. Finlay (2008) suggests that the term has different meanings for different disciplines, and even within disciplines there can be multiple and sometimes contradictory understandings. Brookfield (1995, 2017) describes critical reflection as 'the sustained and intentional process of identifying and checking the validity of our teaching assumptions' and goes on to say that while some of our assumptions are explicit and in our conscious awareness, others are implicit and absorbed from our professional context and therefore much harder to identify. Biggs and Tang (2011) prefer the term 'transformative' reflection as it indicates that something has to change. Burns (2017), however, points out that while reflection often leads to deeper understanding it does not necessarily lead to change. She suggests that action research begins where reflective practice leaves off. However it is defined, reflective practice is not always easy to teach. In a letter to the editor of the journal *Academic Medicine*, Trumbo (2017) uses the term 'reflection fatigue' to indicate that being asked to write a number of reflective assignments can lead to unnecessary repetition for medical students. In the end there becomes a general scepticism about it. His own experience was that in the first two years of a medical degree in the USA, he completed at least 36 reflective assignment including essays on clinical sessions, ethical situations and personal/professional failure. Pekkarinen and Hirsto (2016) looked at the effects of a nine-month pedagogical course on 31 participants at a university in Finland. While they found that the course had effects on pedagogical competency, the same could not be said of the concept and practice of reflection, especially in different disciplines.

Despite these caveats there is substantial evidence that reflective practice is a crucial part of high quality teaching (see, for example, Salter, 2013). Kane, Sandretto and Heath (2004) carried out a rigorous investigation of science teachers recognized as excellent by their heads of department. They found five main characteristics: subject knowledge, skills, interpersonal relationships, research-teaching nexus and personality. Crucially, it was purposeful reflective practice that enabled the participants to integrate these characteristics to better understand themselves as teachers and to improve their teaching practice. In an interview study with nine department chairs and 42 faculty members from Canadian universities, Gebre, Getahun and Saroyan (2011) found that participants believed that good teaching was characterized, in relation to student learning, by teaching strategies that were underpinned by reflection.

How does reflection relate to action research?

While there are pitfalls in reflection as a purely mental activity, the type of reflection that leads to action that is open to challenge and debate by others is a force that will make change happen. Kemmis (1985) argued many years ago that reflection is a political act and one that should be action-oriented and

historically embedded. His view has relevance today. If we think about action research, reflection on some pedagogical issue that concerns us could be the motivating factor to encourage us to take some action. This is illustrated in the following vignette.

Joanna: dissatisfied with her work role

Joanna is a dual-profession lecturer, which means that she spends three days a week as a visiting lecturer and the rest of her time as a highly successful landscape artist. She enjoys juggling the two careers and finds that in teaching she gets inspiration and fresh perspectives for her own artistic work. Her students really appreciate the opportunity to be taught by a 'real painter'. Having taught for several years in this capacity, Joanna is, however, becoming increasingly dissatisfied and is not sure why. In an unprecedented approach to painting she spends several days creating an abstract canvas made of vivid reds and purples and quick brush strokes, but punctuated with two indigo squares that are very precise. Joanna reflects on the meaning of her painting for several weeks and gradually comes to realize that the squares represent her conflicting identities and the colours represent her anger in her lecturer role. She is particularly angered that her art work is not seen as research. She is also unhappy that she is not supported in her pedagogy, having had to learn how to teach by trial and error. She talks to her husband who is also an artist and he advises her to take some action and complain, but Joanna is not sure enough of her grounds to make a complaint.

After much thought and talking with other staff in the art and design department, she decides to focus on developing her teaching. For some years she has worried that students are very reluctant to critique one another's work in seminars, so she reads some of the literature on student-centred learning and wonders if using a system of paired emails might help. She divides her class into pairs and tells them to take it in turns to email each other with their initial response to the art work produced and then to allow the 'artist' to respond to the critique. The emails are private to each pair but they are asked to reflect on the initiative in class. The initiative is a success in terms of students liking it, but for Joanna it raises more questions than it answers, such as why some pairs seem to benefit more than others. She feels emboldened to carry out another cycle of action research by choosing different pairs and interviewing them individually about their perceptions to try and find out why there are differences. She plans to report on these two studies to colleagues in her department.

In this vignette, Joanna is faced with many different causes of dissatisfaction with her work. By reflecting for some time and talking with others, Joanna makes the decision that doing a good job in her teaching is more important than an institutional recognition of her art as research. She already has recognition in her professional career as an artist. In thinking about how to improve her students' confidence in critiquing, Joanna decides to carry out an action research study. Her reflection is much more than an introspective mental activity; it has propelled her to share her thinking with colleagues and most importantly of all, to take some action. Béres (2017) argues that 'the critical reflection of practice' requires openness to new ways of thinking and being, as well as humility and a lack of dogmatism. In carrying out this pedagogical action research study, Joanna will be allowing herself to think in new ways about her students' learning.

Like all professionals in any walk of life, there will be some university academics who are resistant to changing the way they have always taught or to examining their own practice. They prefer instead to rely on experience, professionalism and connoisseurship; this last is often used in connection with marking practice (Orr, 2010). Resistance could be understood as a reaction to some quality assurance processes that have led to managerial processes, rather than valuing and trusting the professional; however, academic reactions are complex (Lucas, 2014). Experience is undoubtedly an important element but, of itself, is not sufficient. We demand that our students become lifelong learners, so why not ourselves? Sotto (2007) questions why we privilege experience over learning. He reflects on his own experience of fifteen years as a learner and another ten as a teacher and wonders why he had not learned more:

> ... it was becoming clear to me that one of the main effects of personal experience is to corroborate for us what we expect to experience... once we have got used to doing something in a certain kind of way, our experience often has the effect of reinforcing the way we actually do it.
>
> (p.9)

Engaging in continuing professional development (CPD) is important for all university teachers. I discuss this in some detail in Chapter 3. However, as mentioned earlier, there are many reasons why academics may be resistant to it. These include generic rather than discipline-focused university teaching programmes, a reaction to top-down managerialist approaches and scepticism about the effectiveness of academic development itself. Faculty and academic developers may see each other quite differently, which makes the relationship and working together in any form of CPD quite challenging (Ashworth et al., 2004).

One of the great advantages of carrying out pedagogical action research is the affordances it offers to engage in our own CPD, particularly if we take a reflective approach as discussed above. I am reminded of the time when I

found myself teaching students – which I had not done for a long time, being more familiar with interacting with staff in various academic development activities. Full of enthusiasm to be back teaching, one of the things I noticed was the students' complete focus on assessment, which I found a little dispiriting. It was an eye-opener to me when my husband and I took a British Sign Language class to help me with my progressive loss of hearing. Both academics, we have always been slightly judgmental about the way assessment seems to direct most students' learning efforts. When it came to our own experience as students, however, we rapidly found ourselves obsessed with the exams at the end of the course. We had become assessment-directed even though we had no need to pass, as we were not looking for a qualification but simply an additional way to communicate with each other.

This personal experience has made me much more sympathetic to student perceptions of assessment. I began to read up on some of the latest literature on feedback and became very interested in a chapter by Jolly and Boud (2012) where they discuss written feedback, exploring its pros and cons as well as making suggestions about how we might improve it. A standout point for me was what they said about trying to avoid 'final vocabulary', a concept introduced by the philosopher Richard Rorty (1989) who has ideas that are consonant with much action research. Reason (2003) discusses Rorty's pragmatism and suggests that there are similarities between his philosophy and five basic characteristics of action research: i) practical knowing, ii) democracy and participation, iii) ways of knowing, iv) human and ecological flourishing, and v) emergent form, meaning 'a pragmatic process of continual problem-solving'.

Rorty argues that language is contingent and we need to keep re-describing it. This has implications for written feedback. Jolly and Boud (2012) reference his ideas by suggesting that there are certain words and phrases we use that leave our students no room to manoeuvre, negotiate or act on our comments. These can be positive, e.g. '*Good', 'Excellent', 'Well done, I like what you've written here', 'A nicely constructed argument'* or negative, e.g. '*Poor', 'You've missed the point', 'Read more'*, but the point about them is they shut down rather than open up students' ability to respond.

Jolly and Boud argue that such feedback using final vocabulary is not helpful because it constrains the possibility of dialogue, or re-describing; it does not relate to specific content and suggests little that the student can do in future work. I was taken by this argument as it resonates with counselling principles that stress the importance of open-ended questions or comments that prolong dialogue and empower the counselee. Closed comments in contrast bring everything to a grinding halt, and affirm our position as experts who hold all the answers. There are links with the concept of action researchers who do not take an expert stance but look instead for practical and pluralist ways of knowing in a continuous process of enquiry. Jolly and Boud suggest that rephrasing some of our statements to questions can be an effective way of opening up dialogue. Instead of making a comment such as '*Excellent'*,

I might write '*To give yourself a challenge, what other sources might you look at to build a deeper understanding of this essay topic?*'

Inspired by this idea, I used it as an idea for a collaborative action research proposal as one of a team of four teaching staff. In our regular team meetings one of the issues we discussed was that students were not really acting on feedback on the draft plans (which were not graded) that they submitted before their essay assignments. I suggested a pedagogical action research study that would be collaboratively carried out by the four of us. The aim of the research was twofold:

1. To analyse the effects of different types of written feedback on essay plans, as each of us had a slightly different approach; my own was to give feedback that avoided final vocabulary. Judging the effectiveness of the different feedback types would be done by analysing students' essays and comparing their reactions to perceived usefulness of different types of feedback.
2. To explore the potential of creating a small focused 'community of practice' among the participating lecturers. The idea was to explore the usefulness of sharing through a focused community of practice, our different approaches to giving written feedback, and our pedagogical philosophies and experiences.

At the outset, three of the team were keen; the other member of staff was unable to attend meetings but seemed in principle to be on board. An ethics application was made which was initially returned because of the committee's concerns about power relations and how the feedback we proposed to give inter-related with our research purposes. This is a common issue with pedagogical research where we might anyway be carrying out innovations and initiatives to help our students. When we overlap this pedagogy with research, disentangling the two can be difficult. (See Chapter 10 for a more detailed discussion.) In the event, these concerns were satisfied and ethical approval was given, but sadly the study did not come to fruition. I did, however continue with my new approach to feedback, but disappointingly it did not have the effect that I was expecting. Thinking about this, I realize that students needed to be better prepared to engage more actively with the dialogic feedback I was trying to encourage.

Reflecting on the failure of the collaborative research proposal, I realize that I had not given enough time for us all to develop and design this study properly. My colleagues were left unsupported and insufficiently briefed. The community of practice idea was too time-intensive for the time that we had available. Perhaps because of the rushed nature of the proposal, the idea and design was driven by me rather than collaboratively designed and agreed by the four of us. While the temptation to carry out a research study was strong, because I had only been appointed to the team at the last minute, the time-scale was unachievable. While this was a pity, I learned something really important about

collaborative action research. This is to make sure everyone has ownership and that there is enough time to build up an effective community of practice to support the research. There is a related issue here, as I reflect and read more about communities of practice and that is the importance of being a mentor. Manesi and Betsi (2013), for example, in a teacher training and development context, argue that mentoring combined with collaborative action research and communities of practice can help participants to a sense of greater professional autonomy.

I give this example of my own as it illustrates that reflection should challenge experience, a key point that I go on to develop in the rest of this chapter. It also illustrates that reflection is not a one-off event and with repeated reflections we can come to deeper understandings of the issues at stake and learn from them.

Why is reflective practice important in the higher education landscape?

One of the claims made by the Academy is that university teaching is a profession but it is only in recent years that university teaching courses have been made available and even now are not compulsory in the UK, nor is there a continuing professional development requirement. A similar situation exists in many other countries such as Australia and the USA for example, although the Government of Western Australia's website on occupations says a university teaching qualification may be advantageous.

Most professions are regulated by law; they have professional bodies with codes of conduct, regulatory practices and the power to admit and sometimes dismiss membership, but this is not the case in higher education. In the UK the Higher Education Academy, now Advance HE, and the Staff and Educational Development Association (SEDA) are scholarly associations but have no regulatory powers over their membership, which is by subscription. In other countries there are similar scholarly societies such as the Higher Education Research and Development Society of Australia (HERDSA). The International Society for the Scholarship of Teaching and Learning (ISSOTL) includes representation from Canada, the USA, Europe and the Asia-Pacific countries. Overall, this lack of regulation means that we have to take charge of our own continuing professional development, as individuals. This will almost always entail reflecting on our teaching and seeking to improve our practice.

How does reflective practice relate to pedagogical action research?

One of the points I stress when facilitating action workshops is that reflection is an essential characteristic of action research, distinguishing it from many other types of educational research. Jove (2011) writes about how as action researchers we have to learn how to use self-reflection in our action research.

Jove wanted to find out how she could improve what she was doing as both a teacher and a teacher educator and action researcher through reflection. She did this by analysing her students' written assignments. One approach that she found useful was the work of Jack Whitehead on living contradictions in his living educational theory (Whitehead, 1989, 2009) where he argues that we do not always live to the values we espouse. Jove's analysis helped her to see living contradictions between her theoretical framework of teaching and research practice. She concludes her article on her action research study by suggesting that new contradictions are likely to appear or maybe she will rethink the contradictions that have appeared. This is a good way of thinking about reflection during and after an action research study.

Whitehead's concept of living contradictions reminds me of the distinction that Argyris and Schön (1974) put forward between espoused theories and theories-in-use. Espoused theories are those that we claim to follow. They can be derived from our discipline, our pedagogical beliefs or our values. Theories-in-use are those that actually determine what we do and can be inferred from our actions. This has always been for me a fascinating concept and a very useful tool for triggering reflection on my practice and why I did what I did. For example, I believe in a facilitating model of teaching rather than a transmission model which is typified by what Paolo Freire (1970) characterizes as a banking model in which the teacher makes 'deposits' in the learner. In recent years, my views have become more nuanced from a straight distinction between student- and teacher-led learning. Nevertheless, I do believe that a banking concept of education is to be avoided which would suggest that when I am teaching I avoid the traditional lecture method. Yet why is it that inevitably I find myself with a PowerPoint presentation that almost always favours a content-focused transmission approach? To be fair to myself I do use the PowerPoint to facilitate and engender participation, activities and discussion, but over the years I have found PowerPoint to have exerted an almost unbreakable hold on me.

This is an example of a gap between my espoused theory and my theory-in-use, or in Whitehead's terms, a 'living contradiction'. There are three reasons I can think of to explain this gap:

1. I am concerned about what I think my students or workshop participants will be expecting.
2. The physical educational space: most classrooms have a projector at the front of the room or lecture theatre.
3. Quality assurance expectations that my learning outcomes will be made clear, that the content will be structured and made available to students beforehand.

So if I were to step outside these concerns, I might be taking a professional risk. Perhaps even more pertinently, I would feel as if I had lost a valuable crutch

which enables me to order my thoughts and prompts me if I forget things. In other words there is a complex inter-relationship of factors that contribute to my living contradictions. If I were to pursue this further I could design an action research study which might in the first cycle involve interviewing fellow academics about their views of using PowerPoint. Reflecting on these findings could lead to a further cycle where a few of us experiment by teaching without it. Wolstencroft and Thompson (2017) have carried out such a study. They conducted an action research project on a group of part-time first-year students taking an initial teacher training programme, who were also teaching. For one unit on teaching English, Wolstencroft and Thompson taught using a variety of teaching strategies excluding PowerPoint. They then interviewed the students to see what they thought of it. They concluded that while the students appreciated the other teaching strategies, when it came to their own teaching, they were reluctant to change their approach, mainly because of others' expectations. This provides a nice example of how our pedagogical beliefs can be overturned by external factors, or at least are affected by them in complex ways.

Points to ponder

1. What are your espoused theories of teaching and learning (your pedagogical beliefs) and where have they come from?
2. Can you recall any occasions when you found yourself teaching in a way that did not match your pedagogical beliefs? If so, why did this happen?

Reflective thinking and action research as transforming perspectives

A vivid example of a deeply reflective and honest piece that has implications for action research has been an article by Ruth Balogh who wrote the foreword for this edition. Balogh (2010) argues that material from dreams offers a resource for action research. As a psychologist, I initially read this article with some scepticism; however, by the time I had finished reading it, I was convinced by the scholarly approach to think there may well be some real merit in this suggestion. What this also did for me was to alter my whole thinking about self-analysis and dream interpretations seen in an action research context. In short, I had what could be called a perspective transformation (Mezirow, 1978). Mezirow writes about how the most unique feature of adult learning is that we become aware of how we are caught in our own history and relive it. This he says leads to the process of perspective transformation, which means we see ourselves and our relationships with others, with our institutions and with society: 'Perspective transformation reformulates the

criteria for valuing and for taking action'. (p.100). When I read the article about dreaming, I reflected on how my subject discipline of psychology has not only shaped my views on many aspects of human experience by privileging some and devaluing others, but it has also made me the academic and researcher that I am today. This realization enables me to at least consider stepping outside the box even if I am not quite brave enough to do so completely.

One of the best accounts of the process of transformative learning in a higher education context that I have come across is that by Gravett (2004). She uses the term 'teaching development' from a transformative learning perspective based on Mezirow's (2000) transformative learning theory. This involves individuals gaining a critical insight and awareness into their own ways of thinking and assumptions. Insight, on its own, is not sufficient to effect change, so there must also be an evaluation of alternative ways of doing things (in this case, teaching) together with a commitment to make a change. This might be, perhaps, by synthesizing some new elements with the old, or less often, by replacing a teaching method with an entirely new one. In either case, if the change is to be driven by a genuine transformational process, the individual academic will be able to justify her or his actions with a dependable knowledge base.

Real conceptual change or perspective transformation is, however, very difficult and takes a long time, which is why managerial, top-down approaches to improving teaching quality are hard to implement. At best, there is a grudging compliance with whatever is being offered as the latest teaching innovation, but no real ongoing long-term changes will be made. Gravett (2004) lists eight elements of what she calls transformative learning, based on the literature. To illustrate these, I have added my own interpretation in italics using a fictionalized account of the common pedagogical issue of student engagement (see, for example the literature review by Trowler (2010).

Gravett's (2004) transformative learning (p.261):

1. It needs a trigger (problem/issue) that makes us aware that the way we previously thought and acted is not adequate to deal with this issue. *Students are not engaged with my course. I know this because they are not attending my carefully prepared lectures, which I had thought were both stimulating and exciting.*
2. It engenders a feeling of disequilibrium or unease. *I begin to wonder: Are my lectures not that interesting? Am I a poor lecturer? What are lectures for anyway?*
3. There is a recognition and articulation of assumptions that are largely held unconsciously. *It is essential to cover the curriculum content when designing my courses. I need to demonstrate that I know my stuff; I am an expert in the subject.*

4. This is followed by a questioning and examining of our assumptions, including where they come from, the consequences of holding them, and why they are important. *Is covering content what the curriculum means? If so, it means believing in the information transmission approach to teaching, which I am no longer sure I do believe in. Yet this is the way it is always done in our department, indeed, this is the way I was taught, so can there really be anything very wrong in it?*
5. There is a need for engaging in reflective and constructive dialogue in which alternative viewpoints are discussed and assessed. *I talk to my colleagues in the department who assert that lectures are the staple of the curriculum and the problem lies with this year's cohort of students who are not as able as previous cohorts. I am comforted but not entirely convinced by this explanation, so seek the advice of the staff development unit who introduce me to the concept of teaching as learning facilitation and suggest methods such as problem-based learning or experiential learning methods. I am quite shaken by this new way of thinking about teaching as it had never occurred to me before, but now it has been explained, it seems so obvious.*
6. Assumptions and perspectives now need to be revised to make them more discriminating and justifiable. *I now see lectures in a completely different way and while not ready to jettison them completely, I do feel able to revisit each one to make sure it fulfils my new learning-facilitation approach. This is how I see myself as experiencing the 'perspective transformation' that Mezirow (1978) and Kember (2000) refer to.*
7. The need to take action arising from the revised assumptions. *I am redesigning my courses to use lectures as opportunities for my students to become more actively involved in the topics I am presenting. I have been given so many suggestions by the staff development unit that I fear the result might be a mishmash of innovative techniques which are exciting in themselves but which, if put together without an underlying pedagogical rationale, will possibly do more harm than good and confuse the students.I decide to focus on using the personal response system (PRS), an electronic device where students use handsets in the lecture theatre and can vote in answer to a number of questions I pose them. Not only will students enjoy being actively involved in this way, the technique will give me an on the spot way of checking their understanding about certain concepts, which I can further explain if it appears they do not understand. I am also keen to see if the PRS system will have an effect on student attendance, my original problem, as well as what I hope will be a more long-term effect on improved understanding leading to better exam performance.*
8. The previous seven steps will build a sense of competence and self-confidence in our teaching role. *I am wholly respectful of the way my colleagues teach by conventional lectures, but I no longer feel that I have to unquestioningly accept that this is the only way. I feel ready to be able to defend this point of view with*

> *some solid theoretical arguments as well as with some empirical evidence of the effects of my own experimentation with a new teaching method.*

Gravett goes on to say that taking these essential elements of transformative learning and applying them to teacher development fits very closely with an action research approach. In her paper, she describes a South African study designed to look at the effects of an action research project designed to assist a curriculum committee in designing and implementing an appropriate teaching methodology for the new curriculum they were in the process of constructing. The action research project aimed to shift teachers' perspectives and practices from a teacher-centred, content–focused approach to a learning-centred dialogic teaching approach. Three institutions were involved and, of the three, two appeared to take well to the new methods but the third institution largely abandoned the new dialogic teaching approach. This, Gravett says, was caused in part by the lack of support and belief in the methods introduced from the top down. This study illustrates how action research can only be as effective as the managerial structures that underpin it.

How can reflective practice play a role in developing our teaching and learning?

Reflective practice can take many forms and can be differently interpreted depending on our academic discipline; reflection does not always sit comfortably within the science paradigm, for example. Whatever our subject, reflecting on our teaching and learning practice in a systematic way can be quite daunting if we have never tried it before and do not know where to begin. There is much in the literature to offer guidance, such as the work of Jenny Moon, for example, who has made many of her valuable resources freely available on the internet as well as having written a number of books (see for example Moon, 1999, 2004, 2006, 2010).

Brookfield (1995, 2017) suggests a framework for critical reflection as teachers using four lenses:

1. our own autobiography as a teacher (and as a learner);
2. our students' eyes;
3. our colleagues' perspectives;
4. the relevant educational literature.

Griffin (2004) has written a really helpful essay showing how each of these lenses can be used to reflect critically on our learning and teaching practice:

> In this essay, I will use Brookfield's (1995) four lenses for reflection to begin to develop a framework for thinking about how my students experience learning, as well as what impact the teaching methods and strategies I choose might have on their experiences. I begin by looking through each of

the lenses (autobiography, our students' eyes, our colleagues' experiences and the theoretical literature), and conclude with a synthesis of what I have discovered from these reflections.

See: http://griffingeographics.com/Brookfield.pdf

I think this model can equally well be applied to a pedagogical action research study and illustrate it here by returning to the case of Joanna, the dual-profession academic:

1. Joanna's main identity is as a professional artist but she clearly remembers her own experience as a university student when she struggled with academic work because of her dyslexia. Reflecting now, Joanna realizes she has carried this feeling of inadequacy into her work as a lecturer and this affects how she thinks about her current challenges.
2. In her pedagogical research study, Joanna finds out not only the students' views of the email initiative but also their views of her as a lecturer which she finds surprisingly positive as they like her empathic approach.
3. In discussing some of her difficulties with her colleagues, Joanna realizes that her expectations of getting more support stem from her personal history. Carrying out the action research study has actually given her more confidence and a keen interest in the pedagogy of art as a vocational and academic subject.
4. Her reflection deepens as a teacher and as a researcher when she begins to read some of the literature on art pedagogy and on emails as a method of enabling students to critique each other's work.

An example of real life reflection in a doctoral study using an action research approach is presented in the following case study.

Action research and reflective practice in music education

A case study – Anne James, Liverpool Hope University

Prior to undertaking a role in teacher education I was a busy teacher in secondary music education – I had little time for reflection and made no links to theory or research in my teaching. I was good at what I did because I am highly intuitive. I was able to react to 'bad' lessons using a combination of experience and this intuition. I wasn't systematic – it was a question of trial and error. If it worked I kept doing it.

I embarked on teaching adults in the same way. I considered myself an expert and therefore didn't see any need to consider how I might change

my practice in order to develop myself or the experience of my students. I had a sense that aspects of my teaching were not working as well as they could but I had not acquired the skills or vision to make systematic changes and evaluate their impact. I now know that this prevented me from gaining true insight into my practice. I was 'tweaking' my teaching, making reactionary changes rather than reflecting deeply on the issues which arose. Even as I started my action research (AR) I was unaware of the impact that planned change and systematic reflection could have on my ability to be a more effective practitioner.

Largely due to the cyclical nature of the AR process I came to realize that we are never fully formed practitioners, but that we are continually learning, changing and evolving. Jove (2011) claims that 'We have to reflect upon our own teaching methods at a "micro" level in relation to what flows in our university classrooms and its becoming, to the trivial things that appear, to what happens.' (Jove, 2011: 271). Certainly, my new reflective approach during my action research highlighted the benefits of this deep 'micro' reflection.

For me the hardest but most illuminating moments came from reflecting on what my students **said** to me. It is easy after years of teaching to think that we as experts know best. By listening and reflecting on sometimes seemingly trivial discussions I was able to gain insight which ultimately changed the whole course of the research and eventually my actual practice.

After my first cycle of AR I felt that I had stalled. I had delivered a university-based enhancement course and had data to show that this had had an impact on my students' understanding and their confidence to teach. But it was unclear as to why this learning and confidence appeared to dissipate once the student teachers engaged in their school placement. I observed some students teaching and interviewed them about the lessons, and this compounded my confusion as to why the university-based course was not having greater impact on the students' classroom practice. During the interviews the students told me about the challenges they faced on school placement and how they perceived a rift between the university course and their own experience in school. I began to see that I needed to look beyond the university context, to reflect on the school placement in more detail and to consider the student challenges and specifically the perceived gap between the university and school learning contexts. I began to question how I might close this gap and make clearer links to create a more impactful progression from university to school practice.

At this point a casual conversation outside of the formal interviews led me to reflect on something new. One of the participants commented that my specialist

feedback on her lesson observation had supported her to develop her teaching to the next level and that without my feedback she didn't think she would have taught the subject again. The **specialist** nature of the feedback had had a major impact on her confidence and ability to teach music. This was a turning point – by reflecting on this and then relating back to the interviews, the research took a completely different course and ultimately changed the university provision for a number of subjects. It was truly a moment of conversion. What it required of me was to listen carefully, record what was said and reflect deeply (and with humility) on the possible meaning for my practice.

The AR process was not easy for me. It continually challenged me to look beyond what I thought I knew to what was reflected in reality. By keeping a reflective journal I entered into an iterative process which forced me to consider the 'trivial' and seemingly unimportant comments and reactions of my students. To continually question, especially when I seemed to have stalled, helped me to move forward, albeit in untidy spurts. The 'messy' nature of AR was exacerbated by the need to reflect and re-reflect in order to see links in meaning. At the time this was frustrating but ultimately it allowed me to re-align myself with my students, colleagues in school and, ultimately, with my role as a university tutor.

Reference:

Jove, G. (2011) 'How do I improve what I am doing as a teacher, teacher educator and action-researcher through reflection? A learning walk from Lleida to Winchester and back again', *Educational Action Research*, 19 (3): 261–278.

Conclusion

Reflective practice is a complex and challenging element in improving learning and teaching, yet as the literature shows, when viewed as an essential part of the action research process, it has the power to effect change that is transformational within the individual academic's psyche. We do have to be careful not to overdo the personal reflection as it might negatively impact on our self-confidence. If, however, we each begin to learn to challenge conventional wisdom in our practice, this is outward, not inward, reflection and greater change can be made through networking, collaboration and collective action in the bigger context. This potential will be explored more fully in the next two chapters.

Synopsis

- In this chapter I have discussed some of the main reasons for being a reflective practitioner.
- In drawing on the literature, I have considered the different and sometimes contested views of reflection and reflective practice, pointing out that while it can be difficult and troublesome, it is an essential part of the pedagogical action research process.
- Throughout the chapter I have argued that reflection on its own is not sufficient to effect change, and that it should be outward looking.
- Action must follow reflection. One of the most effective ways of improving learning and teaching is to carry out action research.
- Finally, I suggest (in Appendix A) some practical methods to develop your reflective practice.

Chapter 3

Why is the professionalization of university teaching important?

Introduction

In this chapter I will be arguing that professionalizing university teaching is essential if we are committed to improving our students' learning experience in higher education. Professionalization means different things to different people but the characteristic that I want to concentrate on is that of willingness to be a learner. When I was a novice lecturer, I remember sitting in a university meeting and suggesting that 'we were all learners'. A frisson of horror went round the room, nobody would meet my eye, and certainly no one responded to what I thought at the time must have been an awful blunder. Nevertheless, I believed it then and I believe it now. Accepting we are learners as well as teachers means being ready to undertake initial and continuing professional development. Professional programmes may incorporate both formal and informal development, whether or not they are compulsory. Sinclair (2008) wrote a fascinating account of deciding to become a student again so that she could make observations about higher education practices from a first-hand perspective of experiencing them. She asks whether academics who enrol on postgraduate courses in teaching and learning see themselves as students, or whether some irreversible threshold is crossed and we can never be students again. Her own experience suggests otherwise and she suggests that if we are willing to become students again, we allow ourselves to experience further thresholds.

In addition to taking formal courses, I am specifically advocating that we actively engage with the scholarship of teaching and learning (SoTL) to ground our practice in a wider body of knowledge and experience. But there are challenges. I will be considering these in relation to those who teach full-time or part-time (new, mid and late career) as well as for those who are academic/educational developers. I also want to specifically address those who are academic leaders or who have career trajectories aimed at academic leadership. So why do I believe that a scholarly approach to teaching is crucial and how do I think that pedagogical action research might contribute? My response is to start with the students themselves.

Understanding students as learners

It is no longer sufficient for university teachers to have research and subject or vocational expertise; we need to understand the pedagogical principles of student learning generically as well as in our own field. As an example, I am drawing on some literature and theoretical concepts related to students' critical thinking that I have found helpful in my own teaching. Knowing that students come to university with different epistemological positions may affect how able they are to engage with critical thinking. Some of the work in this area has come from King and Kitchener's (1994) reflective judgment model. Their research consisted of semi-structured interviews around ill-structured problems such as the safety of nuclear energy. King and Kitchener were inquiring into how late adolescents and adults came to hold their points of view about the problem under discussion, rather than providing any sort of solution. From this research they developed their model which basically describes our assumptions about knowing in three main stages (further subdivided into seven). In the pre-reflective stage, students think that knowledge is certain and comes from an authority (for example, this could be a teacher, a textbook or a website). In the quasi-reflective stage, there is an understanding that knowledge is uncertain but only because there is some missing information or evidence. The final stage is called reflective judgment and occurs when students realize that knowledge claims cannot be made with certainty but must be judged according to their validity and current evidence. Students at this stage also realize that the evidence changes and so they need to be open to changing their judgments.

Knowing about this developmental model of students' epistemological understandings can have profound effects on our expectations of how they are able to cope with academic demands in their first undergraduate year right through to the level of postgraduate study. Many years ago, we carried out a questionnaire study to ascertain first year undergraduates' level of reflective thinking about their subject (psychology, music and mathematics). Responses were analysed using King and Kitchener's seven-stage model to see if they showed evidence of more advanced reflective thinking after a year of degree study. Our results suggested that there was little difference between students in the three subjects, the majority of whom were at the pre-reflective level of thinking and this had changed very little by the end of their first year (Norton, Kahn, Van Arendsen and Walters, 2001). I still use this finding to think about effective ways of helping students come to terms with studying at degree level and of introducing them to the discipline.

King and Kitchener (1994) also argued that the development of reflective judgment was both limiting to learning as well as being affected by learning. We found little evidence of this in our study, but perhaps our measures were too blunt. The model of reflective judgment has resonances with Hofer and Pintrich's (2004) work on students' personal epistemologies. They argue that a personal epistemology is a multi-dimensional set of interrelated beliefs about

knowledge and knowing, that are shaped by the teacher, the task and the learning environment.

This concept appeals to me because of my psychology background. I am not suggesting here that we all must have an in-depth knowledge of the research on human cognition to understand more about the student learning experience. Simply knowing that our students may be at very different stages of development and have different understandings of knowledge itself could bear directly on how we teach them. Knowing something about how students learn should be an integral part of initial and continuing professional development. It is one of the core aspects of knowledge in the United Kingdom Professional Standards Framework (UKPSF) (Higher Education Academy, 2011): 'How students learn, both generally and within their subject/disciplinary area(s)'. It is also linked directly with the professional value: 'Use evidence-informed approaches and the outcomes from research, scholarship and continuing professional development'. The relevance for action research is highlighted in the following scenario:

Janek: pitching the curriculum at too high a level

Janek is a sociology lecturer who has been asked to teach an introductory course on social psychology to first-year students who come from a variety of programmes including social work, sociology, and education. Social psychology is not Janek's field of expertise so he diligently reads up and is fascinated to find that the subject has been through a number of crises the earliest of which was in the 1970s where the discipline was critiqued for its focus on individualism, its research methods and its theory. Janek followed this up and decided that rather than developing a straightforward curriculum covering the basics of social psychology, he would design some seminar sessions based on students studying the different crises and developing their own critiques of social psychology as a discipline. Unfortunately not only did the students dislike this approach, they took a formal complaint about his teaching to the head of the sociology department. On asking to see Janek, Professor Clements gently suggested that he might like to read about students' epistemological understandings and consider whether the stage his students were at would enable them to understand such a task.

Taking her advice, Janek did read some literature and was enthused enough to carry out a small pedagogical research study exploring students' personal epistemological beliefs. This revealed that nearly all of them were at a stage where they believed that knowledge was certain and handed down by authorities. Here was a potential explanation as to why they reacted so adversely to a radical curriculum that Janek now realizes, would have been better suited to students at postgraduate level. At Professor Clements'

suggestion, Janek took his findings to a departmental meeting in which several colleagues became very interested and eager to collaborate on a further research study using action research to explore how students' epistemological beliefs were related to their ability to critically evaluate in their written assignments.

This scenario, based very closely on one of my own early teaching experiences, is an example of how sometimes we can with the best of intentions 'miss the mark' by not understanding our students. In this case, Janek did not understand that their beliefs about knowledge were at an inchoate stage. He is unlikely to come across this understanding through experience. He may, however, come to it through professional development or, as is the case here, by talking with an experienced academic and mentor. In this scenario, we can see how an action research cycle has significant potential not just for Janek and his students but possibly for the whole department.

I want to refer here to the work of Lee Shulman, an American psychologist and educator who has had a significant impact on higher education. Shulman (1986) used the term 'pedagogical content knowledge' to mean how teachers interpret and transform subject matter in the context of their understanding about how students learn. This includes understanding students' conceptions of the subject, general knowledge about teaching strategies, curriculum knowledge, knowledge of educational contexts and knowledge of the purposes of education. Pedagogical content knowledge is developed not only through experience and practice, but also by sharing, reflecting and collaborating with other teachers (Janek does this). It has to be applied, which means there will be some sort of teacher transformation. This might be through questioning one's previously held beliefs about students, the subject and the nature of teaching. In this respect, pedagogical content knowledge concept bears a close resemblance to many aspects of pedagogical action research. Finally, Shulman says that newly developed pedagogical content knowledge must be communicated (Professor Clements suggests this to Janek). Again there are similarities to pedagogical action research, which also must be disseminated.

What do we mean by professionalism in university teaching and what are the challenges?

Perhaps a good place to start is in the work by Bostock and Baume (2016) who suggest that there are six elements of professionalism (pp. 36–37) to which I have added my own comments in italics:

1. Being scholarly and/or using scholarship. *This will be explored later in this chapter.*
2. Being critical and reflective. *This was the essence of Chapter 2.*

3. Using explicit sets of values, ethics, principles and codes of provision. *I have touched on this but will return to it in Chapter 10.*
4. Requiring a qualification or accreditation; a licence to practise. *The Higher Education Academy, now Advance HE, might have fulfilled this role in the UK, but it chose a different route. The question of pursuing accreditation can be controversial such as the ongoing debates between psychology, counselling psychology and professional counselling in the USA. (Brady-Amoon and Keefe-Cooperman, 2017).*
5. Doing continuing professional development and staying in good standing with a professional body. *This is the most important element of being a professional and may be challenging when we are at a mid or late career stage particularly if we are suffering from burnout or overloaded with administrative and/or managerial tasks. Engaging with pedagogical action research might be particularly attractive in such circumstances.*
6. Having autonomy, independence and academic freedom. *This comes with certain responsibilities and obligations, and again pedagogical action research might be a useful strategy for balancing autonomy with responsibility.*

Bostock and Baume claim that one of the biggest problems with professionalizing learning and teaching (to which they add academic development), is that most academics already have a profession or discipline. They might see teaching as an additional or second profession which would mean acquiring a second academic identity. Fernández (2013) makes a similar point in the European context: 'university lecturers very often identify themselves with the specialty and not with teaching, the latter of which becomes a somewhat secondary aspect of their professional practice' (pp. 349–350).

This second identity is not the same as having a research identity that is inextricably linked with being a subject or vocational expert and is the way that most of us become lecturers or faculty. To take on a second profession as a university teacher means becoming well-versed in the relevant scholarly literature. Again the problem is compounded by the fact that much of this scholarship is generic rather than subject specific. Potter (2008) suggests 'creating meaningful links between generic discourse and teaching and learning as experienced within discipline contexts is a critical element of enabling SoTL [the scholarship of teaching and learning] to flourish in the discipline'. (p. 63)

Appleby and Pilkington (2014) propose a model for professional development which comprises two concepts of critical professionalism and professional capital and links the individual, the institution and the wider context. They argue that:

> becoming a professional is not a one-off or static activity. Supporting professional career trajectories requires a range of tools suitable for different contexts across a changing professional lifespan. These tools may encourage

> professionals to engage with their own 'taken-for-granted' assumptions and beliefs, their cultural and educational constructs.
>
> (Ghaye and Ghaye, 1998, p. 19)

Their emphasis on a lifelong commitment to professional development has implications for those who define themselves as academic or educational developers. There are many different labels for this type of professional but they have a common role. They are appointed specifically to help university teachers to reflect on, develop and enhance their teaching and learning practice. Academic developers usually work in a dedicated unit that may be independent or may be subsumed under a bigger department such as human resources. There are tensions associated with this role such as the difference between an academic developer whose pedagogical expertise might be generic and a discipline or vocational expert whose pedagogical expertise will be related to the discipline. In a Swedish university, where educational training is obligatory, Ahlberg (2008) carried out a survey comparing senior science academics' views of the principles of teaching and learning with those of academic developers. His findings suggested that for the concept of 'academic development' to be accepted by science researchers who teach, pedagogical training programmes 'should probably focus on didactic aspects of their scientific disciplines and rely largely on empirical evidence' (p. 134). This may be quite a different approach for those academic developers who come from a social sciences, humanities or educational background. There would be an exciting potential for an action research study here, perhaps building on Ahlberg's research to establish what discipline backgrounds academic developers have and what effect their programmes have on academics from different disciplines or fields.

Points to ponder

1. What is your view of compulsory training in teaching and learning?
2. If you have experienced postgraduate teaching preparation, were there any tensions between the pedagogical principles you were taught and those of your discipline background?

What do academic/educational developers need to consider?

Academic development is defined differently in different countries. It can be referred to as staff or faculty development. Many use the term educational development (Mason O'Connor, 2016; Green and Little, 2016). Whatever the terminology, it is taken to mean some type of formal training in the practice and scholarship of teaching and learning (SoTL). For some, however, such formal

development is resisted. There are many credible reasons. Boud and Brew (2013), for example, discuss the importance of more closely aligning academic development to the practice of professionals:

> It must recognise that all practitioners have a particular scope of practice and that development involves extending that scope. A practice perspective moves development away from deficit assumptions about academics' skills and knowledge and considers all aspects of academic work.
>
> (p. 219)

An action research approach would help to fulfil such a brief, as it has a focus on practice. Several PgCert and Masters programmes in learning and teaching incorporate an action research study in their assessment requirements.

In the UK, many courses and continuing professional development schemes are accredited by the Higher Education Academy (now Advance HE) against the four descriptors of fellowship (associate, fellow, senior and principal). According to a review by Pilkington (2017) of HEA-accredited CPD schemes, at the end of 2015–16, 124 institutions in the UK had HEA-accredited CPD schemes. This is a trend that is growing. Poole (2010) carried out an action research study within a single institution. His aim was to explore how an e-portfolio approach might encourage established academics to engage with the UKPSF at senior fellow level. His findings suggested that institutional acknowledgment and reward would be an important element in any such scheme. The institutional context has important implications for academic developers. When interacting with staff about the benefits of engaging with formal learning and teaching development, they need to be absolutely candid about how the institution they work in values such development. If this is neglected, colleagues may feel they have been misled.

Knapper (2016) sounds a note of caution about educational development. He suggests that hard facts show that educational developers probably have not made that much impact. He doubts, for example, that any academic would pick up a scholarly text on learning and teaching. I would take issue with him as some of our research shows otherwise. In a questionnaire survey, 73% of 586 'new' lecturers who had been on PgCert courses agreed that they read the literature on learning and teaching to underpin their assessment practice (Norton, Norton and Shannon, 2013). I do acknowledge, though, that self-report measures such as these are a proxy for what participants may gain from such training. The issue of impact is one that Jones et al. (2017) argue has a range of meanings depending on the type of programme and the participants. The impact is different depending on how each programme's aims and objectives are designed. In the PgCert programmes that I am familiar with, the inclusion of some type of action research activity may well inculcate a change of hearts and minds that is practically impossible to quantify. In a recent HEA resource on action research (Arnold and Norton, 2018a), we have presented an

accompanying number of case studies written by colleagues from across the sector, that clearly demonstrate the gains that can be had from carrying out such projects (Arnold and Norton, 2018b).

How does scholarship fit into our understanding of professionalism?

I begin this section with a brief account of the history of the development of the scholarship of teaching and learning (SoTL) movement. It originated in the USA and can be traced to the concept of the scholarship of teaching attributed to Boyer (1990), whose work was subsequently developed by the Carnegie Foundation for the Advancement of Teaching. Boyer was unconvinced by the way that research and teaching were seen as being in opposition to each other, and by the way that reward structures in universities privileged the discovery of new knowledge through discipline-based research. In his view, other equally important aspects of academic work such as integrating, applying and transmitting knowledge were undervalued. To address this problem he suggested reconsidering the traditional meaning of scholarship, so that it should be recognized as residing in all aspects of academic work. Boyer (1990) proposed four domains of scholarship:

1. the scholarship of discovery (which is the traditional concept of subject research);
2. the scholarship of integration (which involves making connections across the disciplines and placing specialities in a larger context);
3. the scholarship of application (which goes beyond the application of research by developing vital interactions where one informs the other);
4. the scholarship of teaching (which both educates and attracts future scholars by communicating the excitement at the heart of significant knowledge).

Boyer was advocating that the scholarship of teaching should have its own status and recognition. Although there have been many critiques of his four domains, his writing is heavily cited as it opened up the debate about the split between research and teaching and helped the arguments for making both equally recognized and rewarded.

Conceptions of the scholarship of teaching and learning: what does the literature say?

Kreber (2002a) described four differing conceptions of the scholarship of teaching based on earlier work she did with Cranton (Kreber and Cranton, 1999). I have added comments relating to pedagogical action research in italics:

1. The process by which teachers conduct and publish research on how to teach their discipline. *This relates closely to pedagogical action research, as discussed in more detail later in this chapter.*
2. The scholarship of teaching as teaching excellence. In her later work Kreber (2005) downplayed the importance of this conception, but she originally wrote about the distinction between excellent teachers, expert teachers and teachers engaged with the scholarship of teaching and learning (Kreber, 2002b). She argued that excellent teachers are characterized by knowing how to motivate their students and help them when they experience difficulties in learning. Their excellence is borne out of their own experience and practice. Kreber went on to say that excellent teachers do not necessarily have to be expert teachers, but experts do have to be excellent. Expert teachers go beyond their own experience and personal reflections by considering educational theory and the literature reporting on educational practice. *Reflecting on this argument, I wonder if this is actually the case. I would argue that to be an excellent teacher you do need to engage with the literature and go beyond your actual practical experience. This is one of my fundamental arguments for undertaking pedagogical action research.* Teachers who engage with the scholarship of teaching and learning, go one step further by making public their knowledge, practice and understanding. This can be through research or through other methods of dissemination.*This aligns with my thoughts in Chapter 2 around reflection being collaborative and outward-looking rather than an individual private activity.*
3. Scholarly processes in which teachers make use of the literature of teaching and learning to inform their own practice. *This would include the experts and the academic scholars, described above. Using the literature is an essential part of pedagogical action research and of reflection and is, to my mind, the essential criterion for advancing a scholarship of teaching and learning in its call for more theorized practice.*
4. A combination of the first three elements, which also includes essential scholarly elements of reflection and communication. In their paper, Kreber and Cranton (1999) suggested that academics need to conduct research on teaching and learning in their own discipline. *This, of course, may not be the only way of reflecting and communicating, but it remains unclear from the literature generally whether or not this is considered an essential element. Readers will not be surprised that I believe conducting our own research is vital.*

The scholarship of teaching and learning is also aligned with what Kenny et al. (2017) term the scholarship of educational development (SoED). They argue that there is a need for educational developers to engage more with SoED by citing Timmermans (2014):

> We must also adopt the same scholarly and evidence-based approach that we promote in others by drawing on research to inform practice,

> conducting research and collaborating with colleagues to create and share new knowledge. Underpinning the collaborative and scholarly work of educational developers is a deep reflective spirit which prompts us to question assumptions, think critically about our work, and question the effectiveness of practice.
>
> (pp. 313–314)

This quote concurs with what I have written earlier about reflection, questioning and being critical of our own teaching and assessment practice. It also reminds us of the need to model or practise what we preach. This would be a critical consideration for those of us who have aspirations to be academic leaders in higher education, or who have already achieved this role.

What is the present status of the scholarship of teaching and learning?

Fanghanel et al. (2015) carried out a literature review supported by the Higher Education Academy to find out how the scholarship of teaching and learning is currently understood and used across the HE sector. They define SoTL as a model used to reflect on teaching and learning practices in higher education:

> SoTL is a research-led form of professional development, and has the potential to inform policy and practice at institutional level, for example, in career development and in the promotion and recognition of teaching excellence.
>
> (p. 3)

From their literature review they concluded that SoTL is understood as an institutional tool for strategically developing excellence. They also acknowledged that there is still a lack of clarity as to the status of SoTL in relation to the field of 'education/higher education' and pedagogic research; and finally there is a perception that SoTL work lacks 'rigour'.

This last conclusion is one that I am familiar with, as it is a common criticism of action research (see for example, Ackermann, 2012; Heydenrych, 2001; Koshy, 2009) and has been discussed thoroughly by McAteer (2013), Coghlan and Brannick (2014), McNiff (2016) and Duffield (2017) among others. Such a debate can be partly attributed to the fact that we situate ourselves in different research paradigms. O'Brien (1998) describes how a scientific and positivist paradigm would be concerned with objective reality in which knowledge is gained from data that can be independently verified. Educational researchers in this paradigm will be looking for hard data, usually quantitative. They are likely to use methods such as experiments, closed-response questionnaires and measurement tools that produce data that can be statistically tested. They are therefore more likely to view research that does

not take a similar scientifically oriented approach to be less rigorous. A more interpretivist paradigm (often described as the social sciences reaction to positivism) would be concerned with the belief in a socially constructed subjectively-based reality that is influenced by culture and history. Data are seen as qualitative. Educational researchers from this paradigm would be likely to be interested in a phenomenographical/phenomenological approach, so common methods would include interviews, focus groups, narrative, drawings, life stories, diaries and case studies. The third paradigm that O'Brien (1998) describes is that of praxis which in the educational context is often attributed to Paolo Freire (1921–1997). Freire argued that it is a form of action that is informed and linked to certain values. Praxis is particularly relevant to action research as it is a fusion of theory and practice when reflection and action come together. Smith (1999, 2011) argues that praxis is more than action after reflection as it embodies action that is determined by values. Such values include respect for others and a commitment to human well-being. He goes on to say that it is always risky and cites Carr and Kemmis (1986):

> It requires that a person makes a wise and prudent practical judgement about how to act in *this* situation.
>
> (p. 190)

Thinking about praxis, from the original Marxist perspective of being practical and revolutionary, we can see that, like action research, it has a deeper ethical and political aim to empower marginalized people to transform their own lives. As educators we believe in the potential of education to change lives but that means sometimes making difficult decisions. I have said earlier in this book, that if we are not able to change the status quo, we may at least tell 'uncomfortable truths'. This also for me links with the concept of being a professional university teacher.

I have used this aside to consider research paradigms as, like our subject disciplines, they may influence not only how we view action research itself but also what methodologies and methods we might select in carrying out a study. As a psychologist, I began my own venture into action research by carrying out an experimentally designed intervention on giving essay feedback which was clearly positivist in approach. Some action researchers might suggest it was not action research at all. My stance is that privileging one type of research over others is not helpful as each approach acts as a lens to illuminate different aspects of our understanding of a phenomenon. As action researchers we should seek to be inclusive in our research methodologies, as long as we are ready to justify them and make our decisions transparent (Norton, 2014a). In my own action research journey I have moved more to interpretivism and praxis, but I would never have started at all had I not begun with an approach that used positivist principles.

Returning to SoTL, Fanghanel et al. (2015) indicate that it is 'gaining traction internationally to develop and recognize teaching competence/excellence.'(p. 4).

They suggest that there is a move away from individual practice to more strategic institutional and national priorities to use SoTL to develop competence and excellence frameworks. This would be a pity if individuals were discouraged from engaging with scholarship. There is a worry that more frameworks also fall into the trap of becoming a way of demonstrating 'measures' of competence underpinned by a technical skills approach to teaching. McCarthy (2008) points out that the most important purpose of SoTL is to inquire into student learning as well as its objectives of publishing and critiquing higher education teaching.

Many of us come into teaching because of a love for our field and a desire to help students to learn and to flourish in practice. Teaching involves our hearts and minds, the values we hold and our beliefs about the nature of higher education. Such principles are fundamental yet cannot be easily captured (Biesta, 2010). Action research can certainly promote engagement, reflection and action; although it will never be able to compete with large-scale metrics, nor is it intended to do so. I believe it would be a step backwards if in the drive for recognition, status and funding, individual efforts were squeezed out.

One of the reasons why the scholarship of teaching and learning is so ill defined, and perhaps not as readily recognized as other terms, may be due to the fact that it has developed differently in different countries, being much more readily recognized in the USA than in the UK. As Kreber (2002a) noted, the notion of professionalism in university teaching took hold in the UK as a response to a national enquiry into higher education (Dearing, 1997). This led to the establishment of the Institute for Learning and Teaching in Higher Education (ILTHE), which later became the Higher Education Academy (HEA) and is now Advance HE. Currently in the UK the Teaching Excellence Framework is exerting a profound influence on universities and their policies, but its long-term effect is yet to be ascertained. In the USA, the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) was launched as a major programme of the Carnegie Foundation for the Advancement of Teaching in 1998. It has had a major impact on how the scholarship of teaching and learning is understood and applied (Huber, 2013; Hutchings, Huber and Ciccone, 2011). The International Society for the Scholarship of Teaching and Learning (ISSOTL) was founded in 2004 by a committee of 67 scholars from several countries. It has held annual conferences since 2004, attended by scholars from a wide range of nations. The Society has its own publication, *Teaching and Learning Inquiry,* an open-access journal that publishes research, theory and commentary on investigations of teaching and learning in higher education and is free to educators across the world.

It is through initiatives like this that we can see the wide-ranging influence of the scholarship of teaching and learning. For an international perspective on what SoTL means there is a 13-minute video on YouTube where different experts in the field give their definitions (Center for Engaged Learning, Elon University, 2013). This is an interesting compilation of a broad range of views but there are commonalities as well. Most of the contributors talk about the importance of

finding a good question to ask about your teaching and students' learning, answering that question systematically and going public with your findings.

Fanghanel et al. (2015) make a number of recommendations based on their literature review, one of which I highlight here as it has implications for pedagogical action research. They recommend that SoTL should be recognized in systems that assess the quality of research rather than separately in systems that assess the quality of teaching. This might at first sight appear to be a promising way forward, but there is always the worry that pedagogical research does not appear to have been as equally recognized and valued as other discipline-based research in previous research assessment iterations in the UK (both the current Research Excellence Framework and its predecessor, the Research Assessment Exercise). Kneale, Cotton and Miller (2016) carried out a study for the Higher Education Academy exploring outputs in the REF 2014 Education Unit of Assessment (UoA) as well as interviewing UoA co-ordinators and other stakeholders interested in higher education research. They found that only a small proportion of submissions were related to higher education research. They also found there was some confusion between pedagogical research and SoTL. My personal conception of the distinction is that whereas SoTL means direct and active engagement with the scholarly literature in pedagogy it does not necessarily imply we have to carry out pedagogical research ourselves. If however, we do carry out pedagogical research, we must also engage with the relevant scholarly literature.

In their recommendations, Kneale, Cotton and Miller suggest that for those who do pedagogical research in fields other than education, collaborating with educational researchers might be profitable. They also suggest aiming for national and international research outputs and publishing in peer-reviewed rather than practitioner-based journals. Their recommendations accord with my own calls for pedagogical research to be high quality, appropriately theorized and methodologically robust for publication in esteemed journals (Norton, 2014b). However, I also think we need to be realistic and make our own decisions about our career paths and the potential consequences of choosing pedagogical research. For some of us this may be a second string to our bow. I have known many colleagues who have been very successful in this strategy, but for others it may be that we do pedagogical research because of our educational values and beliefs. It is also enjoyable, motivating and can be deeply fulfilling.

What part does academic leadership play in advancing pedagogy?

Like many other terms in higher education, academic leadership is ill-defined and sometimes is taken to mean management, particularly middle management. In the Higher Education Academy's categories of fellowship, academic leadership would apply to those who hold senior or principal fellowships (see Appendix C).

Wiley (2014) gives an interesting insight from her own experiences as a programme director and in terms of her professional development. She makes the point that academic leaders differ from leaders in other organizations, partly because most academics are autonomous and internally motivated so leadership is likely to work better if it is collaborative. She also points out that academia can often be tribal, citing Becher and Trowler (2001), and that change management is an inescapable aspect of the rapidly changing Higher Education environment. Like all leadership roles, change management is integral, and academic leadership is no different, but there are challenges specific to the higher education context (Brown, 2011).

A term I prefer is one that is used often in the school sector – that of 'pedagogical leadership' – as this is the aspect that focuses on improving learning and teaching, rather than the broader elements of leadership and management. From the literature, it seems that academics may become academic/pedagogical leaders in many different ways; some are promoted to departmental heads, some may be inspirational in the subject or general pedagogy, some are professors either of subjects/fields, or of learning and teaching (Evans, 2015). Still others might come to it through their pedagogical research (which is what happened in my own case). This is not an exclusive list but an indication of serendipity. There are also those who are appointed to academic development centres or units who may come from academic backgrounds or more controversially not be academics at all (Gray, 2015).

Whatever the route, I believe that pedagogical leaders must demonstrate scholarship knowledge (generic or discipline-specific) as well as practical experience. Their role is to encourage, support, inspire and enthuse colleagues to want to improve learning and teaching. A collaborative approach which values the individual and encourages networking is likely to engender better outcomes. A specific example of this is the sometimes problematic practice of peer observation. One approach has been to develop the peer observation process from a management to a developmental tool (Byrne, Brown and Challen, 2010). I have always found that peer observation preceded and followed by professional learning conversations in a mentoring context is effective (inasmuch as this is what my mentees have told me).

There are clearly many skills and competences that an academic leader should have, but one that I had not considered before is Su and Wood's (2017) suggestion that a cosmopolitan outlook and vision is needed for academic leadership:

> Academic leadership needs the cosmopolitan outlook in the two worlds we inhabit, the local and the wider world. We argue that a regard for our citizenship in the wider world is fundamental to our humanity, to our encounters with others and to the cosmopolitan outlook.
>
> (p. 4)

This quote reminds me of the need for academic leaders to be humane, to have values that are continually examined and to have a view of higher education that is bigger than our own immediate context.

Points to ponder

1. Think of an academic leader (however you define that role) who has made an impact on your approach to learning and teaching.
2. What particular qualities did that individual possess and what did they do to change your thinking and professional practice?

How can pedagogical action research contribute to the professionalization of learning and teaching?

In the abstract discussions that are found in the literature about the need for a scholarship of teaching and learning, there is also an imperative to turn these abstractions into practical realities. This is so that those of us who are working 'on the ground' can move towards making our students' learning better than it was before. Many of the proponents of the scholarship of teaching and learning agree that researching our own teaching should be an essential element, often referred to as pedagogic or pedagogical research.

Pedagogical action research is a specific form of pedagogical research that has certain defining characteristics, which I will describe more fully in Chapter 5. In pedagogical action research we start from an issue rooted in our practice, we carry out research and then we move to theoretical explanations that will help us to understand the implications of our research findings. Pedagogical action research is thus a compelling way of enabling us to actively engage with the theoretical knowledge that underpins the scholarship of teaching and learning.

Such enquiry-based learning is much more likely to appeal to our intellectual curiosity as academics than more 'compulsory' methods of becoming more knowledgeable about the learning and teaching literature (Breslow et al., 2004). It puts us in charge of our own learning about learning. It addresses very practical needs and, much like problem-based learning, it is done in order to address a real issue that is of relevance to us. Pedagogical action research is a systematic process, which ensures that in following the conventions of doing research we will seek out the relevant literature in our topic. This is a natural way of engaging with relevant pedagogical theory as it is determined by our need to know and it means we are in control of what and how much we read. Pedagogical action research is not a 'quick fix' solution for professional development but it does give us, as practitioners, the freedom and the responsibility to engage with theoretical knowledge in a way that meets our own perceived needs and concerns. This is illustrated in the following scenario:

Jenny and John: flipping the classroom

Jenny and John are both experienced Geography lecturers with a particular interest in technology- enhanced learning. Jenny uses mobile technologies in fieldwork and John is a keen user of social media in his introductory human geography lectures. Both have read a little about the concept of flipped learning and are keen to try it out in a course on resource management that they both teach on. Flipped learning reverses the conventional method of teaching in which students are required to study the learning material beforehand. Class time is then devoted to deepening their understanding through discussion and problem-solving activities – www.heacademy.ac.uk/knowledge-hub/flipped-learning-0.

Jenny and John redesign the course by asking their students to watch a series of video clips that are specially chosen to represent various areas of sustainability so that in class they can discuss in depth the complex issues involved. The intervention is a great success in terms of enthusiastic student evaluations but the assignments showed a superficial grasp of the issues. Initially discouraged, Jenny and John read up a little about flexible e-learning and are particularly struck by Gordon's (2014) suggestion that one of the issues is how well students can prepare for the nature of flexible e-learning, especially when/if the focus of control moves from staff to student (p. 8). Realizing that this was a major issue with their own students, they decided to read more in the theoretical literature about student learning before embarking on another intervention.

Sometimes, as in Jenny and John's case, when teaching interventions do not appear to work, it encourages us to look for explanations in the literature that give us a much deeper understanding about how our students learn. The impetus to engage with the scholarly literature comes from our own need to know rather than an externally imposed requirement.

Conclusion

Professionalizing university teaching is a policy development that while not accepted by all is being increasingly recognized across the sector. In this chapter I have put forward a case as to why I think it is important for all of us who are committed to improving our students' learning experience. 'Improving' is a difficult word because it has implications of a deficit model (Biggs, 1994) but this is not what I mean at all. Rather than take a position that my teaching is as good as it possibly can be, I am always looking at ways to make it better; this is at the heart of action research where Jack Whitehead and Jean McNiff (2006) suggest that the key question is 'How do I improve my practice?'

Professionalization is not just for new academics, it is for all of us at whatever career stage we are at. It is also for those of us who hold the role of academic leaders or academic developers. The expectations of being a professional include engaging with continuing professional development. This means not only being conversant with the pedagogy of our disciplines or fields but also having some familiarity with the generic pedagogy of learning and teaching. We need to go beyond our practitioner experience to become aware of the significant pedagogical content knowledge that exists in the theoretical literature and in the empirical research. For some this will involve taking courses and attending learning and teaching events that are facilitated by academic developers who themselves are committed to their own professional development and scholarly understandings of pedagogy. For others it may involve personal commitment and effort in understanding and applying the relevant scholarship literature. A mechanism exists in the UK and internationally for individual academics to apply for fellowship of the HEA by submitting an application in which they clearly describe and reflect on how their practice matches the UK Professional Standards Framework in terms of areas of activity, core knowledge and professional values. HEA fellowships are increasingly being taken up by applicants from other countries, including Hong Kong and China, the USA, New Zealand and Australia. The scheme will continue under Advance HE. Similar teaching quality frameworks or quality assurance systems exist elsewhere such as in Australia (Chalmers, 2010), or in the European Higher Education Area and Bologna process, for example. Each country will have their own processes for teaching reward and recognition. The International Federation of National Teaching Fellows www.ifntf.org/about and the ISSOTL Multi-National Teaching Fellows are communities dedicated to excellence in teaching and learning. Then there are field specific organizations such as the Canadian Association for Medical Education www.came-acem.ca/awards_certificateofmerit_en.php which gives certificate of merit awards. When competing for such awards and recognition, researching our own professional learning and teaching practice may be one source of evidence, but it is also frequently an integral part of our continuing professional development.

Synopsis

- In this chapter I have presented a case for the professionalization of university learning and teaching. I have argued, using views that have been expressed in the literature, that as academics we need to do more than reflect on our own practice and experience. There are many ways we can do this: by formal training, and by personal engagement with learning and teaching matters. We need to be learners as well as teachers.

- I have examined the effect of the scholarship of teaching and learning and the need for us to be scholarly, no matter what our role is. While the purpose of this book is to make the case for pedagogical action research, I have suggested that to be scholarly we do not necessarily have to be pedagogical researchers but if we are actively researching learning and teaching we cannot do it rigorously without being cognisant of the relevant scholarly literature.
- Throughout the chapter I have argued that whatever stage we are at in our academic careers, we need to undertake continuing professional development that focuses on ways of developing our learning and teaching practice. My own standpoint is that undertaking our own pedagogical action research is an effective strategy.

Chapter 4

How can pedagogical action research contribute to career development?

Introduction

This chapter consists of a literature review of non-traditional roles in higher education and the implications for career development. I have broken this down into two sections. In Part 1, I discuss what action research might offer in terms of career development for those of us whose roles are other than traditional full-time (tenured) academic lecturers. In Part 2, I consider the affordances of obtaining a qualification in university teaching and learning. Although I focus on non-traditional academic roles, I have written the chapter to be relevant for anyone who is interested in developing a career with a learning and teaching focus in universities.

PART 1 CAREER DEVELOPMENT FOR ALL

The list of learning- and teaching-related roles is long but may include professionals such as librarians, central student support staff (for example disability advisers, counsellors), laboratory technicians/demonstrators and information technology specialists, graduate teaching assistants or postgraduate researchers who teach, those who are on one-year contracts, hourly paid or sessional staff, and professional practitioners who are early career academics or visiting lecturers.

As it would not be possible to include every role, I have chosen to discuss three main categories of university staff whose work and responsibilities fall beyond the mainstream of the traditional academic. These are sessional staff, graduate teaching assistants and professional practitioners. To these three, I add the category of teacher-educators, to show how expertise in one setting can be drawn on in another. In so doing, I hope to interest all readers, mainstream or otherwise. My argument is that action research is for everyone, including those who feel marginalized (Brand, 2013). While the specific detail of particular practice contexts may not appear to be immediately relevant, they serve to illustrate the benefits of different ways of looking at practitioner identity through an action research approach. The literature cites the close connections

between epistemology (what we know) and ontology (how we are, and are becoming) in action research. (Balogh, personal communication, 2018).

One of the practical ways that action research might contribute to building a career in universities is to engage in reflective practice. When evidenced, reflective practice can be used to support applications for institutional roles with a learning and teaching focus. These may have different titles such as 'learning and teaching fellows', or 'champions', or as in my own institution, 'key practitioners'. Beyond the institution at a national level, there are schemes such as the 3M National Teaching Fellows in Canada. Many other countries have their own system of awards and recognition but all require a significant track record in enhancing learning and teaching practice.

Long-term goals such as these can help us to build a learning and teaching profile. Along the way, we will want to apply for other indicators of recognition that again will differ from country to country. In the UK and in other participating countries, this would typically be applying for one of the four levels of HEA fellowship. In this instance, the processes of action research can help with reflective practice, will align with the Professional Standards Framework and will provide a starting point for an application. To illustrate this, I present (in Appendix B) a fictional action research study of an application for Associate Fellowship of the Higher Education Academy, Advance HE. I have used the example of an academic librarian, Richard, who, in working with colleagues in a Law Faculty, transcends professional enclaves in his commitment to improve students' information literacy. He is also keen to advance his own standing in the field of learning and teaching. As such, this example serves to illustrate the opportunities that action research can offer to professionals other than traditional lecturers.

Career goals

It is difficult when planning an academic career to know whether we should concentrate on research or on teaching, or be more reactive and adapt to the latest demand or trend (e.g. employability). I carried out some interviews with a number of early-career academics who were appointed as postdoctoral teaching fellows initially on a one-year contract. One common experience they all mentioned was that although they had been employed mainly to do teaching, there was an assumption that they would also carry out research. This was particularly so if they were aiming to get tenure. This dual expectation was in a system where they were often asked to 'fill in' and teach subjects they knew little about. This added further strain particularly when some of them already lacked confidence about their own teaching and marking ability. Teaching a subject in which we are not an expert is not uncommon, but as Huston (2009) suggests, it is rarely acknowledged. She suggests several advantages to not being a content expert. One of these is that we will have a much greater understanding of the time that it will take learners to achieve a given task in the new area, as well as

the number of steps they will take to master the new concept. Also Huston says that as 'content novices' we are more likely than subject experts to relate new concepts to everyday life. This is because we do not have access to specialized expert knowledge from which to draw examples. I like this book because it delivers much more than its title of *Teaching what you don't know* suggests. It is also about effectively teaching what we do know as well. If we are in a similar situation, it could be an opportunity to develop an action research study analyzing our own experiences.

Regardless of our position and academic role, we each have to make choices about how to develop our academic careers. Knowing about some of the pressures will help us to clarify our career development and job satisfaction goals. It would be good planning to think about this from the very start of an academic career rather than, as several of my interviewees called it, 'surviving' their first year. However, if we are mid-career and feel stuck in a rut or would like to do something to refresh our professional practice in teaching and/or research, action research also offers the opportunity to take our career in a different direction. If we are considering such a move, then it is important to consider our own circumstances. This will be a complex interaction of our employment contract (the micro level e.g. full-time or part-time; temporary or permanent; or early, mid or late career), the subject discipline or profession we belong to (the meso level e.g. sciences, arts, humanities, social sciences, or inter-disciplinary) and the strategy of the institution where we work (the macro level e.g. employability, civic responsibilities, widening participation).

Another opportunity that pedagogical action research can offer in terms of developing a learning and teaching career is to use it as evidence in a claim for fellowship of the Higher Education Academy, Advance HE. See Appendix B for how this could work.

Points to ponder

1. What are your career goals?
2. To what extent might action research/practitioner research feature?

Sessional staff

The first category I want to look at is that of sessional staff. Bryson (2013) uses this term to mean those who are not on salaried contracts, who may be paid at an hourly rate or perhaps on a fee. If they do have contracts, they are usually for a fixed term. In Australia they are called sessional teachers and in North America, adjunct faculty. Bryson reflected on a ten-year study in the UK to see if anything had changed. He identified six issues that contribute to a sense of marginalization for this particular group: conditions of work, access to

promotion and an academic career, professional development, inequality of opportunity, insecurity and uncertainty, and a narrow range of roles.

The specific issue of relevance to us is that of career development and professional identity. As Bryson points out, there are also advantages in these types of job in that many colleagues who love teaching enjoy the freedom to concentrate on this aspect. Although I am at the opposite end of the academic career trajectory, being an emeritus professor who also benefits from a close and supportive relationship with my university, I relish the opportunities that doing hourly paid work entails. It allows me to choose what I like doing best (teaching and supervising at postgraduate level). I do recognize, though, that being at the start of an academic career, such a situation could be very frustrating. Brand (2013) calls those who are in this position 'the lost or invisible tribe'. The literature also indicates that most part-time staff feel more negatively than positively about their situations. However, there is cause for optimism. Bryson suggests that things may change due to the increasing focus on the student experience across the sector worldwide. This will hopefully see more part-time staff included in career development opportunities.

There are indications of progress. In Australia, Harvey (2013) reports that a new paradigm of quality standards is influencing learning and teaching in higher education. This could be used as a strategy for quality learning and teaching for sessional staff who, she says, form most of the face-to face teaching in Australian universities. Using a participatory action research methodology three departments were involved in four main research cycles and produced a standards framework called the Benchmarking Leadership and Advancement of Standards for Sessional Teaching (BLASST) (Harvey, 2014). This detailed document has three guiding principles: quality learning and teaching, sessional staff support, and sustainability; and is presented in terms of institutional, faculty and individual responsibilities. It also articulates three standards: unsustainable, minimum standard and good practice. The BLASST framework is an encouraging indication of the way that sessional staff might be appropriately supported to develop their own learning and teaching practice, and to contribute to that of their colleagues. Coincidentally, the fact that such a framework was produced by an action research project gives us all the encouragement to see what might be achieved, certainly at institutional level.

A further issue that faces sessional staff is highlighted by Savage and Pollard (2016) who point out the dangers of fragmented work which can mean sessional staff:

> becoming known for a single function they carry out, rather than for a number of functions that might at least approximate to some extent the variety of work done by an ongoing academic. Fragmented work can reduce sessional staff to markers only, or practical demonstrators only, or tutors only. (p.3)

Such an observation, together with the fact that sessional staff are often appointed at the last minute, has implications not only for their development and their identity but also for being able to share in the culture of learning and teaching afforded to their full-time counterparts. The picture would seem bleak and change is slow, so what are the options for sessional staff who want to take a more proactive role in their own learning and teaching enhancement?

While accepting that everyone's situation is different and that it may feel insurmountable for an individual to take action, it might be possible to collaborate with one or more full-time academics in an action research study. The advantages would be aligning with, and learning from, established members of the department, as well as contributing perspectives that they might not be aware of. It could also act as a form of continuing professional development (CPD). Another possibility might be to carry out some form of enquiry into the position and perceptions of sessional staff within an institution. This was the approach taken by Savage and Pollard (2016).

What I am suggesting here is that it is possible for the individual sessional academic to undertake some personal CPD. It is also feasible for the individual to carry out a form of enquiry that might influence institutional policy. Lest readers think that this is too far-fetched, I would only say that my experience has taught me that big movements can happen from very small beginnings in pedagogical action research. I have written about this elsewhere (Norton and Owens, 2013; Norton 2014c), where I describe the development of an institutional wide network of pedagogical action researchers that included librarians, a dean and academic assistants as well as university teachers. Its influence grew beyond the institution when we hosted a series of three biennial conferences, and published an in- house journal. Anything is possible.

Points to ponder

1. Given your own employment situation, could you think of colleagues who might be interested in collaborating on an action research study?
2. What particular issues might interest you all to commit to such a study?

Graduate teaching assistants

In this category, I am also including PhD students who are teaching assistants, and postdoctoral researchers who teach in the sense of supervising and mentoring students on research projects. The consensus in the literature is that this is a substantial and growing part of the academic workforce in higher education and a worldwide phenomenon. Haley et al. (2017) describe the benefits that can accrue from being a graduate assistant (administrative, teaching or research) in the USA. For graduate teaching assistants (GTAs) this would be developing

university teaching skills and establishing a foundation for a future career as an academic. Haley et al.'s research, however, also indicated that many of the participating GTAs did not get the type of mentoring and training that they expected, as they were keen to improve their teaching practice.

Santandreu Calonge et al. (2011) write about the Hong Kong context where they say that postgraduate students tend to have a content-orientated approach to teaching but because their focus is on research, they demonstrate a reluctance to taking any teaching or staff development programmes. This observation is borne out by Douglas, Powell and Rouamba (2016) who in reviewing the literature cite Åkerlind's (2007) work, which suggests that the more teacher-centred the belief, the less receptive the teacher was to student-centred practices. Douglas, Powell and Rouamba's own study of eleven graduate teaching assistants (GTAs) working in a mid-western university showed that the assistants held more teacher-centred beliefs about content but more student-centred beliefs about learning. Such a dissonance might be explained by the fact that much of the curriculum and its pace had already been decided but also perhaps by the need for inexperienced teachers, such as these GTAs, to appear authoritative and in control of the class. They suggest that short-term intensive programmes might do little to change beliefs in the long term and what is needed is more protracted mentoring. One of the difficulties that they mention is the lack of time. This is one of the benefits of undertaking pedagogical action research because it can serve two purposes at the same time (improving practice and producing a research output).

Another of the perceived disadvantages of being a GTA is that it is a role that falls somewhere between a teacher and a student, yet there are advantages. Winstone and Moore (2016) explored the experiences of nine GTAs in a UK university and found that rather than being a negative feature of establishing a professional identity, this very malleability was an advantage. Sutherland and Gilbert (2013) have tracked the experiences of sessional tutors in a New Zealand university since 2007. This showed that the majority of respondents had aspirations of a future academic career and were even more committed to this goal since beginning their teaching work.

There have been mixed reviews of the long-term impacts of formal teaching programmes (e.g. Postareff, Lindblom-Ylänne and Nevgi, 2007, 2008; Cilliers and Herman, 2010; Parsons et al., 2012). While 'impact' proves elusive for researchers to capture, there is some agreement that these programmes are effective in changing participants' views of teaching to be more student-centred. McAlpine and Asghar (2010) suggest that instead of expanding such formal programmes, it might be worthwhile considering how we might create environments to enable doctoral students to construct their own learning development opportunities. In an action research study they explored how these students might engage more in the Faculty, particularly in terms of student leadership. One of their findings was that by taking part in this initiative the students were doing 'authentic academic work'. This experience helped them to better

appreciate how their chosen field was situated in 'broader traditions and practices across the Faculty and beyond – and how this contributes to their growing sense of identity and belonging' (p.175). McAlpine and Asghar suggest that this understanding will help prepare them for life as academics in terms of enabling them to be more aware of how institutional factors may influence their own practice.

This study captured my interest because of its notion of students collectively creating their own opportunities for learning development, which implies a self-identification of their needs and motivation to make a change. While McAlpine and Asghar did not specifically suggest it, there is a case to be made for doctoral students and GTAs to engage in action research. This would be strengthened by either establishing a community of practice, or an action learning set (Revans 1982). Rigg and Coghlan (2016) say that action learning and action research and their literatures have become siloed. A notable exception has been the work of Zuber-Skerrit and Associates (2009) who has been promoting action research and action learning as 'linked, integrated concepts' for many years. She has been influential in establishing an organization called the Action Learning Action Research Association (ALARA) mentioned in Chapter 2. JISC (2014) has a useful resource which gives the basics of how to set up and run an action learning set: 'The aim of the set is not to resolve issues together but rather to help each individual member accelerate their own rate of learning with the support and challenge of the other group members'. This would fit nicely with an action research approach either to enhance and support GTAs doing individual projects or to provide an ongoing mechanism for a collaborative venture.

Points to ponder

1. For you as a graduate teaching assistant or doctoral student who teaches, what are the main benefits and frustrations of your role?
2. What potential advantages can you think of in joining forces with others who have similar roles in your institution to work on a collaborative learning and teaching project?

Professional practitioners and visiting lecturers

In this category I include those who come from varied professional/practitioner-based backgrounds.

Larocco and Bruns (2006), in a study in the USA with second-career academics (meaning seasoned educational professionals who have decided to move into higher education), found that the commonest experience expressed

by their participants was to do with feeling unsure about how prepared they were to teach, to conduct research, or to publish. They say:

> In addition to keeping abreast of developments in their field, early career faculty must demonstrate knowledge and skills in four critical areas: (a) teaching (e.g. preparing courses, evaluating students, supporting non-traditional students, and mentoring graduate students), (b) research and graduate training (e.g. socializing future scholars), (c) service (e.g. working with community programs), and (d) academic citizenship (e.g. participating in college committees).
>
> (p.627)

This is a heavy burden and each faculty and institution will have differing priorities but balancing teaching with research is a common one. It certainly featured prominently in mentoring conversations I used to have with a colleague who was an experienced schoolteacher and had moved later in his career to higher education. He really enjoyed the transition while accepting that there were pressure points, as there were in school. One of the key differences for him was the 'definite unequivocal requirement to publish'. It may be that professional educators, even when in a different milieu, feel more confident about teaching than they do about researching, so taking on an action research study in some area of classroom practice might play to their strengths. At the same time it would give them the opportunity to present their work at conferences and ultimately publish an article in a peer-reviewed journal. I discuss this later in the category of teacher educators.

Blissenden (2008) reports on a study focusing on four law professionals in an Australian university, describing a programme for learning and teaching development which draws on the model of the reflective practitioner. Participants were assigned a mentor, which is quite a common feature of such programmes, but perhaps what is more distinctive is that participants were strongly encouraged to produce a pedagogically-focused article for publication in a peer-reviewed journal. Although Blissenden does not report whether any of the law professionals managed to achieve this, the principle of publishing pedagogical research at a very early stage in an academic career is excellent and one that I write about in detail in Chapter 5.

Southall (2017) presents an auto-ethnographic case study of two industry professionals who were experienced in staff development and who became sessional staff in a UK university. They were invited to become part of an inter-disciplinary research group working in the area of higher education. The group had been established by a small number of full-time academic staff 'with the aim of providing support and practical help to each other as they too worked towards developing research skills and producing work of publishable quality'. As part of this research group, the two professionals experienced a major turning point when they realized that to explore learning and teaching in a more

systematic and publishable way was an acceptable form of research. They grew in confidence and their successes in developing innovative teaching and assessment practices, producing conference papers and a published synthesis of literature, eventually led to them being called 'scholarly practitioners' in an accreditation process in their institution. This case study is a real example of the way that staff who have come from different professional backgrounds can establish a robust academic identity and become recognized for their work in higher education research.

One final comment worth making is that Southall's description of a research group is a credible alternative to the often used communities of practice model which is commonly cited in the literature as a way of enculturating and supporting staff with a professional background. Gourlay (2011) has critiqued this model by reporting on accounts of five staff who came from a practice background and who in the main felt confused, isolated and 'inauthentic'. She concludes that:

> a "community" should not be assumed to pre-exist in an academic department in a form that will allow novices with limited experience of advanced scholarship to learn new practices from more experienced colleagues in a relatively organic manner.
>
> (p.76)

The strength of Southall's research group was that it had a common and clearly articulated goal to which all members were working. Although not necessarily a research group, it might be a useful strategy for new staff to join with a group which has identifiable goals, or to possibly catalyse one. Networks and communities can also be accessed beyond one's immediate workplace.

Points to ponder

1. Have you been involved in a community of practice in your own university?
2. How helpful has it been in helping you learn more about teaching at university level and/or how to get on the research ladder?
3. What might make such communities of practice more helpful to you?

Teachers and teacher educators

This group largely involves teachers who move from the school sector into that of further or higher education – similar to the colleague I mentioned earlier whom I mentored. I have also had the pleasure of working with two small groups of teacher educators by introducing them to a tailored version

of the programme that my colleague Ruth Pilkington and I designed as an induction to university teaching. In my interactions with these groups it became very clear that while they needed to learn about the university context, they had valuable teaching experience and skills that I felt they could contribute to pedagogical development in our university, in much the same way as Southall (2017) has argued. The imperative to research however is ubiquitous. Carillo and Baguley (2011) in a narrative account of their transition from artist teachers to university lecturers use the term 'praxis shock'. By this they mean their realization that not only is university teaching different from school teaching but they are also expected to be research-active. Carillo and Baguley also describe what it is like to have hybrid identities and the importance of appropriate support and mentoring.

Czerniawski, Guberman and MacPhail (2017) carried out an international and comparative needs analysis through a survey of 1,158 higher education teacher educators based in in Belgium, Ireland, Israel, the Netherlands, Norway and the UK, all participating countries in the International Forum for Teacher Educator Development. Their findings suggested that teacher educators were only moderately satisfied with their professional development and evinced a strong need for further professional learning. Van der Klink et al. (2017) carried out an international comparison of teacher educators from ten different countries and found that during their induction their main aim was survival and it was only later on in their careers that they became more aware of establishing a professional identity and an appreciation of their students as individuals. This is not peculiar to novice teacher educators but to all who become university lecturers. Current literature would suggest that overall there is a perception of insufficient professional development and the mentoring that does exist tends to privilege research enhancement over that of teaching.

There are several elements that interrelate in the experience of teacher educators; these include the perceived tensions between thinking of oneself as an experienced teacher but at the same time recognizing that university teaching is different. Another difference relates to one's students who are adult learners as well as novice teachers (trainees) themselves. The rules and regulations in university are different. An example is in curriculum design and planning that needs to take account of quality assurance processes.

While pedagogical action research cannot solve all the tensions for teacher educators, it does have the following benefits:

- Since action research is well established in schools and in teacher education, it would give you further credibility as a university teacher who actually practises action research.
- By engaging in pedagogical action research yourself, you would be able to talk to your teacher trainee students from a position of practical knowledge and experience.

- It enables you to form a network (community of practice or action learning set) with a definable purpose and common goal.
- It provides you with a foundation for establishing a niche in the institution as a teacher or teacher educator who has specialist knowledge and expertise in pedagogy.

Points to ponder

1. What have been the particular challenges for you in moving from the school to the university sector?
2. What might be the benefits of engaging with action research in your current role?

Action research and continuing professional development

In this last section of Part 1, I consider the potential of action research as a strategy to engage in our own continuing professional development. This section applies to us all, not just those in the categories discussed above.

In a paper considering action research as a form of staff development in higher education, Kember and Gow (1992) point out the difference between action research and staff development. Where the latter implies some form of instruction and direction setting, action research is 'based upon collaboration, participation, democratic decision making and emancipation through critical self-reflection' (p.301). Harland and Staniforth (2000) make a similar point. Exploring their own position as educational developers, they reflect on how they have supported the professional learning of academics:

> We now start by encouraging them to engage in some form of systematic research into their own practice. This may not necessarily be "pure" practitioner action research or include more conventional research methods, but it would always involve a research process underpinned by a critically reflexive dimension focused on individual experiences of professional practice.
>
> (p.510)

More recently, Gibbs et al. (2017) discuss how action research can contribute to our professional development. They draw on Carr and Kemmis's (1986) call for an approach that foregrounds what is authentic, personal and existential rather than what is technical or instrumental. This is an important point to reflect on at this stage, as we need to be wary of career drivers that shut down rather than open up our understanding of ourselves as teachers.

In short, carrying out pedagogical action research can enable us to grow as academics with a pedagogical specialism, but we need to seek out sources of support that may exist outside our own institution. A particularly useful and relevant example is the Collaborative Action Research Network (CARN) which is an open and inclusive organization that offers opportunities that are online as well as face to face in terms of supporting and exploring action research: www.carn.org.uk/?from=carnnew/. Balogh, McAteer and Hanley (2017) report on the history and development of CARN and relate how it originated in the context of action research into educational processes. Its early publications exemplified the view that 'action research was both educative and educational, underpinned by an epistemology where the theory-practice relationships were reconceptualized as democratic rather than hierarchical' (p.407). The work of CARN later attracted professionals other than educators such as those from health and social care. It has partners across the world and has discussion groups to facilitate networking. CARN also offers conferences, study days and publications such as the CARN Bulletin and the international journal *Educational Action Research*.

Other networks that might help us include special interest groups run by various organizations such as The International Society for the Scholarship of Teaching and Learning (ISSOTL) www.issotl.com/issotl15/ and in the UK, the British Educational Research Association (BERA) www.bera.ac.uk/. This is a way to link with others by attending meetings and other events as well as by participating in SIG (Special Interest Group) online communities. Some SIGS are inevitably more active than others but they can be a useful way of keeping in touch and up to date in our current area.

PART 2 CONSIDERING QUALIFICATIONS IN TEACHING AND LEARNING

In this part I switch focus to explore how you might obtain a qualification in teaching and learning. It is worthwhile thinking about because such qualifications enhance CVs. Choosing which qualification will depend very much on your own circumstances, including your current role as well as your future aspirations. Qualifications can be at certificate, postgraduate certificate, masters or doctoral level. For those who are early-career full-time university teachers, a postgraduate certificate programme would be appropriate and in many UK universities it is expected if not mandatory as part of the probation period. Some of these courses are available online through distance learning, so could be taken by teaching academics who work in countries other than the UK.

In the UK, since the change from the HEA to Advance HE, those institutions with HEA-accredited programmes will continue to enable successful participants to gain HEA Fellowship. Another scheme is the Staff and Educational Development Association (SEDA) who, through their SEDA professional development

framework (SEDA-PDF), offers accreditation for institutions' professional development programmes, aligned with the UKPSF and using a range of named awards with its own set of specialist outcomes. These are used to accredit different types of professional development and are listed on the SEDA website www.seda.ac.uk/. One I particularly want to draw attention to is the named award for action research: 'The SEDA-PDF named award Action Research enables an individual to select, investigate and enhance a chosen area or aspect of work through the completion of an action research cycle'. For readers who do not work in the UK, it would be well worth exploring similar national accrediting bodies.

In many postgraduate certificates it is common for some element of the assessment to involve the requirement to design, carry out and report on a small action research study on some aspect of participants' learning and teaching practice. In some cases, there will be a further requirement to disseminate in a seminar situation as well as writing a report. Each programme will give details of the exact requirements of their assignments, but the following are more general observations based on my involvement on some of these programmes, with suggestions for how an action research study might be taken forward once the course has been passed. In our recent HEA practice guide on action research, we present some examples (Arnold and Norton, 2018a).

Action research is cyclical so what I personally hope will happen is that colleagues who have started such a cycle in their studies will be encouraged to carry out further cycles; to deepen their reflective understanding as a teacher and to better understand their students' learning. It also might lead to other outcomes related to action research. A Business Management lecturer, Hala Mansour, who grasped this opportunity, used a tool I introduced in one of the classes in an action research project module as part of an MA in Learning and Teaching in Higher Education. The tool was the Essay Feedback Checklist (EFC) which she describes in more detail in Chapter 9. The work she did led to a presentation on her research at her university's learning and teaching conference and was published in a peer-reviewed journal (Mansour, 2015). She has continued in her current practice to develop the EFC for her Doctor of Business Administration students to help them understand the marking criteria in a module about Principles of Research.

Another example has been that of an academic clinical lecturer, Sarah Yardley, who studied on the same programme and who facilitated a workshop for medical educators exploring the potential of an action research framework to address issues about the impact of medical educational research on practice and how practice itself might inform theory development (Yardley and Norton, 2012). In a personal communication, she reflected:

> I think a key thing for me in terms of learning and that module was it opened my eyes to an established (at least in some disciplines) method

> for working in a more collaborative and participatory way. While I have not been able to do a pure action research project since, I have used the principles to improve engagement in other projects and to justify practising in a more collaborative manner with patients and learners.
>
> (Yardley, October 2017)

Such accounts are heartening for they show how action research can continue to influence professionals and their practice, long after the course has been passed.

As well as postgraduate certificates and masters programmes in learning and teaching in higher education, there are an increasing number of educational doctorates (practice-based doctoral degrees in education) that feature action research as part of their taught provision. A typical programme will feature approximately two years of taught study related to research and research skills followed by a dissertation phase (anything between two and fours years) which will be on a research question related to participants' areas of professional practice. Action research fits very well in these doctorates as it transcends the traditional dichotomy between pure and applied research and has an immediate effect on practice; it also is linked very closely with reflective practice. A colleague of mine, Anne James, who is a music educator, carried out an action research study for her EdD (see Chapter 2 for a reflective account of this work). Following her graduation, she has subsequently gone on to present some of her action research within our university in a masterclass on action research and at a Collaborative Action Research Network Conference (James, 2016).

Outside my own experience, I would recommend both Jean McNiff's www.jeanmcniff.com/ and Jack Whitehead's www.actionresearch.net/ action research websites as they each present a useful section on masters and doctoral dissertations that have taken a living educational theory approach. Whitehead (1985, 1989, 2009) was the first person to use the term 'living educational theory' to describe the unique theory that we produce as an individual to explain our own educational influence on ourselves and on others. It acknowledges that there is a contradiction between the values we espouse and the actions in our practice (see also Argyris and Schön's (1974) distinction between espoused theory and theory-in-action). Living educational theory can encompass action research methodologies to answer the question 'How do I improve my practice?

In summary, there is evidence that action research in one of its many forms can play a significant part in a university teaching qualification ranging from certificate to doctoral level. Obtaining such a qualification would enhance one's academic CV and may lead to career progression for those who are not full-time lecturers. I do not mean to imply that the role of full-time lecturer is everyone's goal. Instead, I am suggesting that for personal satisfaction, for building a professional identity and for career

progression, continuing professional development is an important element of the work we do.

Conclusion

In surveying the literature, I have discovered the huge variety of roles that exist in higher education. I have also found out that non-traditional roles in higher education are increasingly common worldwide. My conclusions are that this particular workforce is under-supported and opportunities for development are limited. The default position seems to assume that a system of mentoring and communities of practice will enable individuals to absorb what they need to know by some form of osmosis. This deficit is seen by quality assurance organizations as a risk in terms of student experience and learning. It is damaging for part-time academics who commonly report feeling isolated, marginalized and unsure of their institution's expectations not only in terms of teaching but also in evidencing they are research active. There are many solutions and suggested strategies posed in the literature at an institutional strategic level and Australia is currently at the forefront of some of these initiatives. There are also publications addressing what the individual academic might do, such as the inspirational personal accounts of second-career academics by Larocco and Bruns (2006) and Southall (2017).

In acknowledging the difficulties that some non-traditional roles pose to developing an academic career, I have suggested that there are actions that we can take to develop learning and teaching expertise and to establish a practitioner identity. Individual actions might include studying for university teaching qualifications, applying for professional recognition and/or engaging in action research. Working with others may help to support us in developing our careers, as will organizations dedicated to action research in general and pedagogical research in particular.

Synopsis

- In this chapter I have presented a review of some of the literature relating to non-traditional roles in the higher education sector. I have used this literature as a springboard for considering career development.
- I have argued that looking beyond the conventional ways of developing practice identities and forging careers can be done through a combination of reflection with action research.
- Specifically, I have suggested the potential advantages in carrying out some form of collaborative action research, particularly if it includes other more experienced academics either in the same faculty or beyond. I suggest that

this may be more effective than mentoring or communities of practice, although I do acknowledge there may well be advantageous synergies between them.

- I have also considered the benefits of undertaking university teaching qualifications, seeking professional accreditation. I suggest how action research can be of real benefit both during and beyond the qualification obtained.

Chapter 5

Where do you start a pedagogical action research study?

Introduction

Having hopefully encouraged you that there are sound reasons for undertaking a pedagogical action research project, how do you actually go about it? In this chapter I will describe the stages that you will need to take, by illustrating them with an example from a study I did many years ago and using a hypothetical example. This is to show you how a single research question can be investigated in very different ways depending on the research paradigm you are using and the approach you feel most comfortable with. This issue will be taken up in more detail in Chapters 6 to 8, when I describe research methods and analyzing your data, but for now, I want to show you how to make a start.

The spiral of action research

There is no secret or magic formula for carrying out an action research study; much of it depends on your own professional context and your familiarity with different types of research methodology. The classic advice is to think of action research as a spiral or a cycle where you plan, act, observe and reflect (Kember, 2000). This process was originally based on the work of Kurt Lewin who is generally credited as being the founder of action research (Lewin, 1946). Lewin's approach can be summarised as a series of steps composed of planning, action and then fact-finding about the result of the action taken.

My own interpretation of the action research cycle is that you:

1. observe or notice that something is not as it should be and/or could be improved (observe);
2. plan a course of action which involves changing something in your practice (plan);
3. carry out the change (act);
4. see what effect your change has made (reflect).

Of course, this is an over-simplification of what actually happens and tends to be reified and 'neatened up' when you write it up for presentation at a conference or as a journal article. Researching in higher education is a messy process, where the environment is a complex and social one, and where the problems are ill-defined and ill-structured. Cook (2009) contends that action research is messy as 'its purpose is to facilitate a turn towards new constructions of knowing that lead to transformation in practice (an action turn).' (p.277). In terms of the typical action research process, the researcher goes back and forth in a number of spirals of the action research project, reflecting, reformulating and retesting. Kember's (2000) term of 'fine-tuning' is a helpful way of describing what happens.

A simple process for carrying out action research

Thinking about this in the abstract is likely to put off even the most enthusiastic academic who is keen to carry out a small research project, but a simple six step process remembered by the acronym ITDEM'D will help you to get started. I know this acronym doesn't roll off the tongue but hopefully you can remember it. Once you have begun, you will quickly find you become your own expert, as you find out for yourself more about the benefits, and the drawbacks, of course, of researching your own teaching or learner support practice and the effects that this has on your students' learning.

Step 1 **I**dentifying a problem/paradox/issue/difficulty
Step 2 **T**hinking of ways to tackle the problem
Step 3 **D**oing it
Step 4 **E**valuating it (actual research findings)
Step 5 **M**odifying future practice
Step 6 '**D**isseminating your findings

The forerunner of this acronym was ITDEM, which was first published in a paper I wrote for psychology lecturers (Norton, 2001). Since then I have run a number of workshops using it with colleagues from many different disciplines, where it seems to have been acknowledged as a useful approach to carrying out a pedagogical action research study. I have also added another step to highlight the importance of dissemination. I will firstly describe and explain each step in detail and then use my examples to show how the ITDEM'D process might work in practice.

Step 1: Identifying a problem/paradox/issue/difficulty

A good starting point is to reflect on your own teaching in terms of what currently concerns you. In Appendix D I explore an example of a common teaching issue and a separate student learning issue either of which can be developed by consulting with

colleagues and reading some relevant literature. Some academics have suggested that to start with a concern is too negative; it might be something that already works well and you want to find out how to further improve it. This is a valid point and I think this could equally well be a good first step. From my own experience of doing action research, however, it has been a concern mainly with students and their learning that started me off. Examples include students being unhappy with my feedback, students not applying the theory of learning and teaching to their own understandings of themselves as learners, and students needing more guidance about their essay writing. As soon as I started reflecting on these concerns, they were very quickly translated into an overall question: 'What can I do about it?' Although I was unaware of it at the time, I was getting very close to Whitehead's (1989) more elegantly posed question, 'How do I improve my practice?' I often use this question when presenting workshops on action research as I think it is a useful way of turning a concern that you have into an actionable strategy.

*Step 2: **T**hinking of ways to tackle the concern*

This step is about choosing a method of enquiry. First of all you need to turn your concern into a researchable question. A good pedagogical action research question needs to be derived from the basic underlying question: how do I improve my practice? It should be do-able in terms of size and scale (avoid a question that is too broad or too narrow; think about cost, timescale). It must have due consideration for ethical issues (see Chapter 10). Finally, it needs to be answerable from the type of information you can readily collect and analyze (do you have the necessary skills?) It might be, for example, that if I take my concern that students are not applying theory to their own understandings of themselves as learners, that I formulate a research question: 'What are students' understanding of meta-learning?' The reason I might choose to explore the concept of meta-learning is that I have always been interested in how students understand themselves as learners. Having formulated my research question, I could consider investigating it by using questionnaires, focus groups or interviews with my students. Alternatively, I might think that I know what the root problem is and design a teaching intervention to help them reflect more on their own learning. In this case, my research question might be: 'How effective is the intervention in increasing students' meta-learning?' There are published measures of meta-learning, so it would be feasible to answer this question by designing an intervention and then assessing its efficacy by using a 'before and after' measure of meta-learning (see for example, Meyer and Shanahan, 2004). This would be a straightforward second step which would get you actually started on your own action research study. At this point, I would like to suggest a small activity to help you think about researchable questions.

ACTIVITY

Look at each of the following questions and consider how suitable they would be by ticking Yes or No. I give my answers together with reasons at the end of this chapter.

Number	*Question*	*Yes*	*No*
1	Is there too much information in my lectures and do I go too fast?		
2	How can I make sure I know the answer to every question students might ask me?		
3	What would be the effect of making the assessment tasks easier?		
4	Are marking grids helpful?		
5	How do students use mobile devices in class?		
6	How can I make my lectures more interesting?		
7	Why don't my students read their given texts for seminars?		
8	What would be the effect of withdrawing my tutor presence from the online discussion forum in my module?		
9	What would encourage students to use my feedback?		
10	Why do students have poor numeracy skills?		

Reflecting on this second step I realize that there are other interpretations of thinking of ways to tackle the concern such as looking at it as a function of its context, rather than necessarily just a problem that I have and want to address. 'Students not applying the theory of learning and teaching to themselves as learners' might be a consequence of the curriculum, or what the department or subject privileges, or how the assessment is constructed, rather than anything I have done or could do in my teaching. In this step then, rather than beginning straightaway with a research study such as a focus group with my students, I might first consider a fact–finding mission and consult with colleagues as well as the relevant literature. This step has been called reconnaissance by Lewin (1946) and is more fully described in Appendix D.

*Step 3: **D**oing it*

This step is perhaps a little bald, especially for the practitioner who has not attempted any research like this before. So what do I mean here? This is the step where you think of the practicalities of carrying out your study, having decided on your research question and what method you will use to try and answer it (see Chapter 6). One of the first things you will need to do is to seek ethical approval which, depending on your institutional procedure, might take some time. At this stage it would be wise to ask for advice from an experienced colleague who can not only comment on your ethical application form but can also give you an indication of how long you will

have to wait. Obtaining ethical clearance before you collect any research data is essential, as most ethics committees are very unlikely to give you retrospective approval (for more details, see Chapter 10). Drawing up a timetable with dates for completion will help you to ensure the research is done with due regard to term-times and availability of your potential participants. You may have to consider how you will gain access to your participants. Since they are likely to be your own students, will you be using class time to do your research, or will you approach them at some other time or in some other way (e.g. an email or a Twitter invitation)? Also you will need to build in time to develop your research tools (e.g. questions if a questionnaire or interview; measures of student performance/understanding if evaluating an intervention). If carrying out face-to-face interviews or focus groups you will need to organize a safe and neutral location. All these arrangements take time but the more detailed your planning, the better this step will be when you actually carry out your study.

*Step 4: **E**valuating it (actual research findings)*

This is the step where you analyze your data which, depending on your question and your methods, might produce qualitative data such as responses to open-ended questions in questionnaires; students' written work; transcripts from interviews/focus groups. Equally it might produce quantitative data from closed-response questionnaires; attitude measures; frequency counts of observable behaviours. You may instead decide to use a mix of qualitative and quantitative research analyses – typically known as mixed methods research design (Johnson, Onwuegbuzie and Turner, 2007). Chapter 7 gives more details of how to analyze qualitative data and Chapter 8 gives some basic guidance on quantitative analysis and statistical testing.

*Step 5: **M**odifying practice*

One of the essential characteristics of action research is that it is intended to bring about change in the form of improvement (e.g. Carr and Kemmis, 1986; Eliott, 1991; Gibbs et al, 2017; McNiff, 2017). This is the step where you need to think carefully about what your findings are telling you about your practice and consider what you need to change or improve. Sometimes accounts of pedagogical action research can take the form of intervention, followed by evaluation, followed by refined intervention and so on. In such cases one might ask: 'So how is this process different from that of curriculum development?' My response would be that carrying out action research involves you in questioning what might be taken for granted assumptions in your discipline, particularly in the teaching and assessment of it (see Kreber, 2009). Cameron (2017) reports in an Australian study that while student evaluations were taken account of, rarely was research evidence used or advice sought beyond the disciplines (p.69). This suggests that curriculum development might lack both an evidence-informed and a reflective stance from the teachers, and is a long way

from Lawrence Stenhouse's (1975) original concept of curriculum development as action research. He argued that 'curriculum research and development should belong to the teacher'. Stenhouse's vison of teacher as practitioner researcher has been highly influential in the development of action research. While his work refers to schoolteachers, his arguments equally apply to higher education teachers.

Pedagogical action research demands of you modifications which are based on evidence and on reflection but I acknowledge that the scope might be limited to what 'wiggle room' you have in your own classroom practice. Always the goal is to reach beyond and begin to influence or persuade colleagues to make some changes. One way of doing this is to consider the affordances of disseminating your work, which leads me to the final step of the ITDEM'D process.

Step 6: 'Disseminating your findings

For action research to be considered as 'research', it must be disseminated – which means opening up your findings and conclusions to your peers (see Chapter 11). You might feel that it is too early a stage to report your action research formally and in many respects that would be a reasonable decision. It does your reputation little good if you are too hasty in presenting research that might be poorly designed with questionable findings. If this is your first attempt at an action research study, then it might be wise to hold back a little while you are still learning. However, there are more informal methods of dissemination that may be useful, such as getting feedback from academics you work with. A seminar to interested colleagues in your department or a discussion over a coffee break with a trusted mentor would work well. Many universities run their own learning and teaching conferences, so this would be a wonderful opportunity to share your findings and get some valuable suggestions from colleagues who are particularly interested in learning and teaching; if they are from other disciplines, so much the better. If it is appropriate you might find it fruitful to share your findings with your students, perhaps with a view to getting them more involved as partners in the learning and teaching process (see, for example, Bovill, 2017; Healey, Flint and Harrington, 2014). For those of you who are carrying out an action research study as part a course you are taking, then in a sense you will be disseminating it at least to your tutor. Many programmes also ask for a presentation in class to your fellow students so this is another avenue of dissemination.

Points to ponder

1. How might you think of disseminating your action research informally?
2. What ways might you involve your students as partners?

Having described the ITDEM'D process, I want to illustrate how it can actually work in practice. To do this I have adapted and updated the original examples from the first edition of this book (one hypothetical; the other real) because even though they are old now they are still a useful way to illustrate how you can take two quite different approaches to the same pedagogical problem or concern.

Identifying the issue

Psychology is a discipline that expects students to support their arguments in essays by citing and evaluating up-to-date research most often to be found in journals (O'Siochru and Norton, 2014). Many university teachers will no doubt recognize the following as an issue in their own disciplines, although they may use different terms:

> Students were not using sufficient journals/primary sources in their essays.

Context

The context of this issue was a third-year module on counselling psychology, which I had taught for a number of years. The module was 12 weeks long and was designed to introduce students to the application of psychology theory in the field of counselling. The assessment was constructed to encourage students to consider the strengths and weaknesses of individual therapies applied to hypothetical case studies. I called these Psychology Applied Learning Scenarios (PALS). They were written to represent situations that a professional psychologist might encounter:

> By applying different theories to a PALS case study, students realize for themselves how different approaches to the issues raised are derived from the different theoretical perspective they adopt. This aids them in developing a critical approach to theory and a better understanding of the contingent nature of knowledge.
>
> (Norton, 2004, p.2)

Assessment was crucial to my aim of enabling students to apply their understandings of psychological research to evaluate an appropriate counselling therapy. I set three assignments, which built on each other and helped students to develop the necessary skills and understanding:

1. A team presentation applying a theoretical therapy to a given PALS study (group mark worth 15 per cent);
2. An individual critique of a relevant journal paper applied to the team's PALS study (individual mark worth 15 per cent);
3. An essay applying a theoretical therapy to a second, much more detailed PALS case study (individual mark worth 70 per cent).

In this way I intended to give students practice and feedback in the essential elements of the essay, which was the main assessment task. One of the assessment criteria was demonstrating an in-depth critical understanding of a relevant therapy through applying it to a given PALS case study. The other essential criterion was developing a critical evaluation of the significance and robustness of the research that underpinned their chosen therapy.

In order to do this successfully, students had to engage with journal articles because secondary sources, such as books, would not give them the detail of research methodology that was needed to make such judgments. Despite this careful design in scaffolding the assessment tasks and feedback in their assignments, my students in general were still using very few journal articles. Disappointingly, given my emphasis on the importance of using the most recent journal articles, many of those that had been cited were more than five years out of date. I had told my students that while it was appropriate to cite seminal texts that were older, I was keen for them to concentrate on the very latest research studies.

This was my identified issue, which needed attention; the **I** part of the ITDEM'D process.

There are several different approaches that I could take to this issue, depending on my familiarity and experience with different types of research methodology. To give you an idea of possible research designs, together with their consequences, I have chosen two:

1. Asking the students (a qualitative, interpretivist approach);
2. Designing an intervention (an experimental, positivist approach).

I shall now explore the TDEM'D part of the process using each of these different designs to illustrate how the same issue can be tackled in two very different ways. The first example of an interpretivist approach is a hypothetical description of what might be done. The second example of an experimental approach is the one I actually took and is a description of a real piece of action research.

1. Asking the students: a qualitative, interpretivist approach

Identifying the issue (recap)

'Third year psychology students were using too few up to date journal articles in their essays.'

Thinking of ways to tackle it

There are many ways I could have investigated this issue from an interpretivist perspective. One of the most straightforward enquiries might have been to carry

out an interview study with psychology students at all levels to find out *why* they were not using journals. This would dissuade me from making assumptions about their reasons, which had driven some of my earlier studies in this area. This is one of the consequences of carrying out research following a positivist model. It leads to what is called the first order perspective where the field of enquiry (i.e. your human participants' behaviour) is treated as an objective act influenced only by the experimental conditions and carried out on people who are not trying to outguess you or find out what it is you actually want them to do. I still remember my surprise as a student of psychology many years ago when reading the works of Orne (1962) on 'demand characteristics', to find out the extraordinary lengths people will go to in order to behave in a way that they think you, as the researcher, want them to behave. Human beings are sentient and intelligent and do not behave as objects in the material world, so a first order perspective can only partially explain their behaviour.

The second order perspective is one that acknowledges that how humans perceive the demands of the experiment or research will inevitably affect how they react to any given research situation. Hence the important rise of the phenomenographical approach in research in teaching and learning in higher education (i.e. 'getting inside' your participants' heads and seeing the world as they see it) led by Swedish researchers in the 1970s and pioneered by the work of Ference Marton (Marton, 1981, 1986, 1988).This valuing of the subjective experience has had a profound effect on the way we think about student learning in higher education such as deep and surface approaches to studying (Marton and Säljö, 1976), conceptions of learning (Säljö, 1979), epistemological beliefs (Hofer and Pintrich, 1997, 2004), threshold concepts (Meyer and Land, 2006), expectations and perceptions (Kandiko and Mawer, 2013) and use of digital technology (Henderson, Selwyn and Aston, 2017), to name but a few.

Carrying out an in-depth interview would be taking a second order approach, in which my aim would be to understand the issue from the perspective of the student and not from mine as the teacher/researcher. This type of methodology also sits comfortably within the action research framework, which often favours an interpretivist stance.

Doing it

Asking students to take part in interviews in itself raises different methodological issues that all have to be examined when designing my study. I would have to decide, for example, what sort of interview I would carry out. Should it be structured where all the questions are pre-determined? or semi-structured where an interview schedule determines the main questions but there is scope for probes to elicit more information at certain points? Both these types of interview lean more to the first order perspective of research. Carrying out an in-depth unstructured interview is more likely to establish a

richer picture of the student perspective and might take the form of an opening question such as:

> 'What is your experience of using journals for your psychology essays?'

This gives the interviewees scope to raise their own concerns and issues. However, completely unstructured interviews may be difficult to keep 'on track' so a suitable compromise would be a semi-structured interview, and this is the type most commonly advocated by phenomenographical researchers.

Other design decisions revolve around which students would I ask – all years, or just one? How big a sample? Age range? Gender etc? I might also want to consider whether I should concentrate just on psychology students or broaden my enquiry to students studying other subjects. Thought also has to be given as to who should do the interviewing. If I do it myself there are ethical issues about power; if I ask a research assistant, I lose some of the immediacy in asking the things that I, as the lecturer, want to know about. These are just a small selection of the types of things I would need to consider when designing an interview study. For more details about the interview as a research method, see Chapter 6. For the sake of argument, however, let us imagine, I have decided to carry out a semi-structured interview.

Evaluating it

Having decided on the type of interview, I now have a number of choices about how I will evaluate the research findings. This stage is the crucial one, when thinking about the 'research' element of my pedagogical action research study. Sometimes innovations in higher education are enthusiastically promoted in conferences and websites but lack this essential element of research evaluation. By this I mean much more than collecting student feedback, which undeniably is an important part of evaluating an innovation but should not be the only evidence you seek to collect.

Some of the reasons why you should be cautious about student evaluations have been explored in the literature (see for example, Senior, Moores and Burgess, 2017). My own reservation is more to do with using student satisfaction about interventions as evidence. Simply saying students really valued an intervention, such as the introduction of online marking, and were motivated by it is only part of the story. How did it affect their actual learning performance, for example? Reporting research findings in some detail is, therefore, a very important element of the whole research study. In terms of my proposed interview study, I should be analyzing my data to provide some of the answers to the questions I asked earlier. There needs to be an internal consistency between my research question, my chosen method of enquiry and my interpretation of findings. This is sometimes referred to as the 'golden thread' in research reporting.

Both semi-structured and unstructured interviews lend themselves to qualitative analysis. There are many useful books written on the subject for those who wish to pursue this in depth (some suggestions to get you started are made at the end of Chapter 6). However, the aim of this book is to suggest easy and practical ways for you to carry out your own pedagogical action research project, so I will tell you what I might have done.

I might have chosen to analyze the interview transcripts using content analysis, as it is a technique I am familiar with and enjoy doing. I will return to this method in some detail in Chapter 7. However, a more sensitive qualitative approach, such as phenomenographical analysis, would fit better as it is an approach that would enable me to look for variations in my students' experience of using journals.

Modifying future practice

Since this example is a hypothetical one, I now have to imagine some major findings to illustrate the final step of this action research cycle. I am going to envisage that the most important issue to come out of the interviews was a difference in confidence between first-, second- and third-year students, where unexpectedly the third-year students were less confident than the second-year students. The interview data indicated that the third-year students were acutely conscious that the end of their degree was in sight, and they needed to get good results. They were also realizing how little they knew as opposed to second-year students who thought they knew more than they actually did. In other words, third-year students were more keenly aware of how little they had used journals in their previous two years but felt they could not either admit it or ask for help. This finding would give me the impetus to try and address this situation.

I would now have a new issue, which could lead to another cycle of action research. More importantly, I would need to modify my practice to build in extra support with journal use for my third-year counselling psychology students. I could, for example, devote a class session to literature searching led by one of the librarians; I could set up self-help peer study groups, or I could run one-to-one individual consultations for those who felt they needed it. The range of possibilities is considerable and which one I would choose would partly depend on pragmatic considerations. Perhaps the 'best way' to go, and one which fits in with the true spirit of action research would be to ask the students themselves what would be the most helpful way of boosting their confidence with finding and using journals.

'Disseminating my findings

Since this issue is one that I think will have resonances particularly in the STEM subjects (Science, Technology, Engineering and Mathematics), I might feel encouraged to present my findings at a STEM Higher Education conference. Alternatively I could aim for a more specific psychology in education conference. In such events there tend to be different types of

sessions that you can put in a proposal for. Examples include: a poster; a 'how to …' presentation (short, interactive, 30 minutes); a paper (research-based, 30 minutes) or an interactive workshop (45–60 minutes). These are quite common formats in conferences. While the study would fit a research paper submission, I might feel that it was at too early a stage and that I should wait until I had done one or two more cycles. In terms of the interactive workshop or 'how to' sessions, I would probably consider that these did not fit with my work, although I could perhaps do something on action research! However, I would be most keen to get some external feedback on my research with a view to carrying out another cycle and modifying my practice, so my most likely choice would be a poster.

This has been a description of a hypothetical approach to a pedagogical action research study, but what did I actually do? What follows is a true 'warts and all' account which, I hope, will illustrate how achievable and worthwhile doing a small-scale study can be.

2. Designing an intervention: the pros and cons of using an experimental approach

In this section I show how I used an experimental design to answer my question to fit into a broader action research framework. Because of my psychologist training, I drew on positivist methods as I felt confident in using them, but I was not aiming to establish cause and effect. Instead I used my experimental findings as a starting point for reflection and further action. In this sense I have found an experimental approach, which is not a mainstream action research methodology, to be useful in my own pedagogical practice. It is my aim in this book, to encourage you to adapt *your* chosen methods of enquiry in the same way. Greenwood (2015) analyzed entries in the *Sage Encyclopedia of Action Research* in relation to theoretical concepts used in action research. In a personal note at the end of his article, he takes a similar approach to drawing on positivist principles in relation to his own action research. He goes on to argue that ignoring this type of investigation would be:

> …irresponsible in relation to the needs of the non-researcher stakeholders in AR processes for whom certain kinds of quantitative and positivistic data/analyses may be a critical element in their process of confronting powerholders.
>
> (p.212)

Identifying the issue (Recap)

'Third year psychology students were using too few up to date journal articles in their essays.'

Thinking of ways to tackle it

When thinking about designing an intervention, the range of possibilities is considerable and like all research studies, making the decision is probably the hardest part of the whole process. I could have designed an intervention study and compared students who did have the intervention with students who did not. This is a classic research design in the positivist tradition where the aim is to test a hypothesis by determining an independent variable (the intervention) and dependent variable/s (students' use of journal articles in their assignments), while controlling for extraneous variables as much as possible (ensuring the students in both groups were similar in terms of ability, age, motivation experience etc.).

In the context of real teaching situations (i.e. a module where the assessment under investigation actually counts as part of the overall degree classification), the more controls you put into your research design, the less likely it is that your findings will have any applicability to the real life context. Added to this are further difficulties posed by ethical considerations. Since the assessments count, what happens to the disadvantaged group who have no intervention? Controlled experiments like this are not impossible to do in educational research but they often have limited applicability as they get further and further away from the actual teaching and learning situation that you want to improve.

In the event, I designed an intervention as part of the counselling psychology module, which would hopefully benefit *all* the students in my class. However this did not feel sufficiently robust and the psychologist in me was still keen to compare the results of what I was doing with other groups of students who had not experienced such an intervention. I decided to enlist the support of a fellow psychology lecturer to carry out a post hoc comparison of the outcomes of my intervention with two courses that she taught: organizational psychology and psychology and crime, where no intervention was being offered.

Of course this meant that there was very little we could do in the way of controlling for extraneous variables but it did satisfy us that we were not disadvantaging any students in this design. It was also possible to compare the intervention counselling psychology cohort with the previous year where there had been no intervention. Our hypotheses were:

1. Counselling psychology students will use more journals in their assignments than either organizational psychology students or psychology and crime students.
2. The 2003 counselling psychology cohort (the cohort experiencing the intervention) will use more journals in their assignments than the 2002 counselling psychology cohort (who had had no intervention).

Doing it

The aim of this intervention was to address directly the identified issue that students were not using enough journal articles in their assignments in my module. We thought of two possible explanations worth exploring:

1. 'Our students are not sufficiently skilled in how to search for journal articles.' This was a result of our students repeatedly telling us that they could find 'nothing in the library'. We knew that this was not the case, since two of our research team were former librarians and were able to search out many relevant articles. In a sense, this was not as objective and researcher-driven as some hypotheses, as it came from our actual experience of being practising university teachers, instead of from the research literature. It did, however, fit within the action research model of professionals starting from practical questions that are embedded within their working context, (Bartlett and Burton, 2006).
2. 'Our students do not know how to use information in journal articles.' This came from reflection after a presentation on an earlier cycle from this research at a learning and teaching conference (Norton, B. et al., 2003), when members of the audience suggested that the problem for students was not so much in finding a relevant journal article but in knowing how to use the information in that article to weave into an essay. When we reflected on these comments we realized that what we were expecting students to do was actually quite a sophisticated task. They had to extract from the article relevant information to answer their given essay question, which would have been quite different to the purpose for which the article was written.

Bearing in mind these two potential explanations, my 'intervention' with the counselling psychology students was two-pronged. Given that the module was 12 weeks long and class sessions were only two hours, I did not have a lot of time to play with, so to call it an intervention is actually rather a grand term for what was, in all truthfulness, a fairly small-scale modification to the delivery of the module.

One of the cardinal values of pedagogical action research is that by making small-scale interventions you can often bring about significant pedagogical changes. This is what I did.

1. I spent one hour in a class session on reminding my students how to find relevant journals both in the university library and electronically (I demonstrated a step-by-step guide). I gave instruction about exactly how to write a research critique and gave them an example critique relating to a PALS case study that I had written to act as a model and to help them see what I wanted.
2. I changed the individual research critique assignment from asking students to evaluate three journal articles as in past years, to just asking for a detailed critique on one key up-to-date journal article (i.e. one that had been

published in the last five years) which was relevant to their given PALS case study. I also asked them to present a list of the journal articles they had located that were relevant to their PALS case, fully cited according to the Harvard system.

3. When I marked their critiques, I gave the students detailed written feedback, partly to help them prepare for their presentation, which was related to the same PALS case study, but also to prepare them for the main assignment which was the essay and counted for 70 per cent of their module mark. The criteria I specified were:

   - evidence of an up-to-date literature search;
   - accurate referencing using the Harvard system;
   - critical evaluation of one key journal paper for the PALS case;
   - evaluation of usefulness of chosen key journal paper for the PALS case.

   The essay assignment presented them with a new and much longer PALS case study and they were asked to do the following:

   Choose one or more theoretical approaches which you think would be helpful to the client described in the following PALS case study. Using your knowledge of *the appropriate research evidence* justify why you think your chosen approach (es) might be effective.

Evaluating it

In order to see whether my intervention had worked, a quantitative approach was carried out by analyzing the essays after they had been marked for the number of journals cited in the references list at the end of each essay. The references to journals were subdivided into two categories:

1. recent journal articles (published in last five years);
2. older journal articles (published six or more years ago).

This analysis was carried out by a researcher who went through each essay and from the reference lists counted the number of unique citations to give the total number of journals used, as well as books and web sources. Doing this often reduced what looked like impressively long lists of references to somewhat unimpressive lists when he actually looked at the total number of unique sources used. One example was an assignment where there appeared to be 25 separate references, which actually boiled down to two journal articles and three books. Sometimes it was difficult to decide what were primary and what were secondary sources, given the inaccurate referencing used by some of our students. In such cases he would consult with me and together we would make a best guess. Whilst this process was not 100 per cent accurate, it was as accurate as we could make it.

Looking at the results of this research, we firstly compared the number of journals used in the assignments of the three modules from 2003. We found no differences in the number of journals used between organizational students or crime students who were using five journals on average. But there was a difference with counselling psychology students who used, on average, seven journals – and this was a statistically significant difference (see Figure 5.1).

This was a step in the right direction and some evidence that the intervention was having an effect, but, of course, the difference might have been something to do with the nature of the three types of module assignments rather than anything else. Our next step was to compare the (2003) counselling psychology cohort with the previous (2002) counselling psychology cohort where the essay assignment was virtually the same (see Figure 5.2). Here we found that there was a difference, as the 2003 cohort (intervention) used more journals and, in particular, used more recent journals than the 2002 (no intervention) – and this was a significant difference.

We did the same comparison with the other two modules: organizational psychology and psychology and crime, neither of which had had any intervention. Where organizational psychology was concerned, there were no differences in the number of journals used between 2003 and 2002 but when we came to

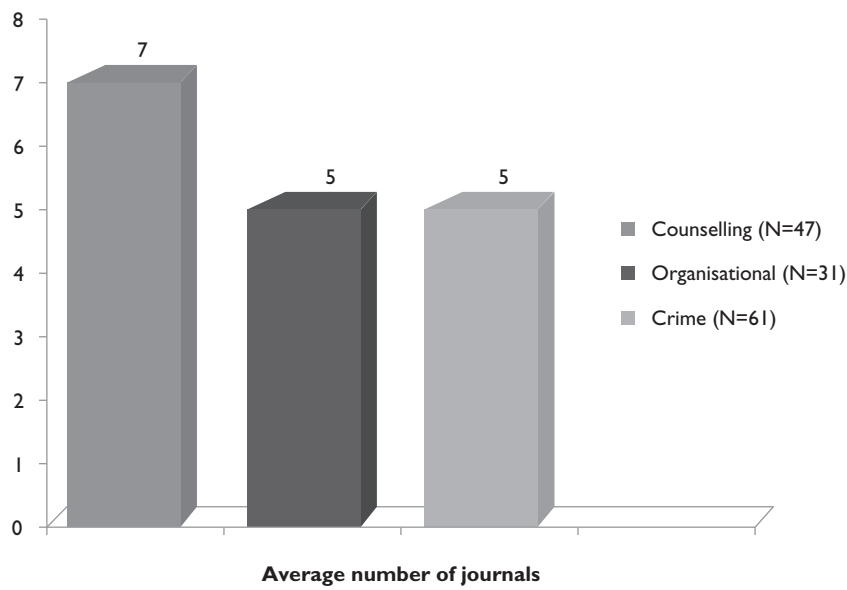


Figure 5.1 Column chart showing average number of journals used in assignments in three psychology courses (2003)

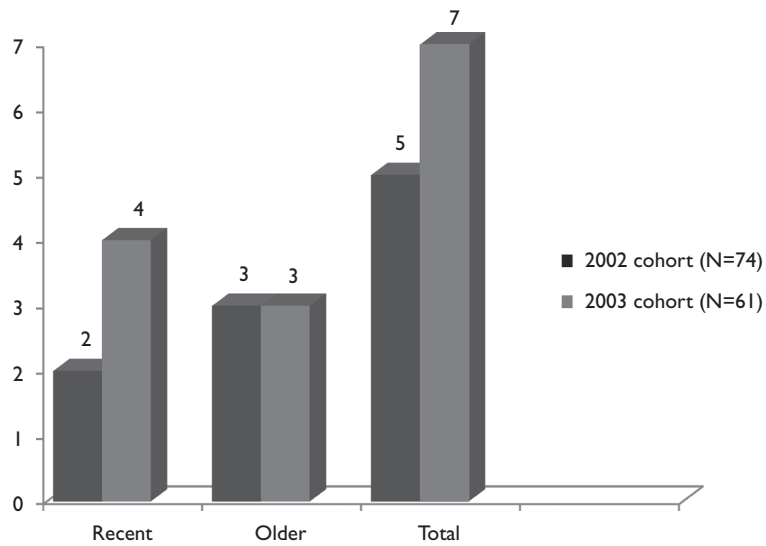


Figure 5.2 Column chart showing average number of journals used in assignment of two cohorts of counselling psychology students

looking at the psychology and crime students' results the picture was somewhat different. Here we saw a reversal where there was a large and significant drop in the number of journals used by the 2003 cohort of crime students compared to the 2002 cohort and this applied to both categories of journals, recent and older (see Figure 5.3).

We really did not know why this had happened. It might have been that this particular crime cohort was not as able as the previous year's cohort, but we did not really think this was the case as there was not much difference in overall grades between the two years. Speculating that it might be something to do with transferable experience, we compared the use of journals by crime students who were also taking the counselling module with crime students who were doing other modules. This was to see if the lessons being learned in counselling would transfer over into the psychology and crime module (see Figure 5.4).

We found that there was no difference in the use of recent journals, which was a little disappointing, but there was a difference in the use of older journals. Students who took counselling as well as crime used an average of seven journals overall in their assignment as opposed to an average of only four journals overall for students who took some other module as well as crime. This was mildly encouraging and gave me some hope that my intervention was having a modest effect.

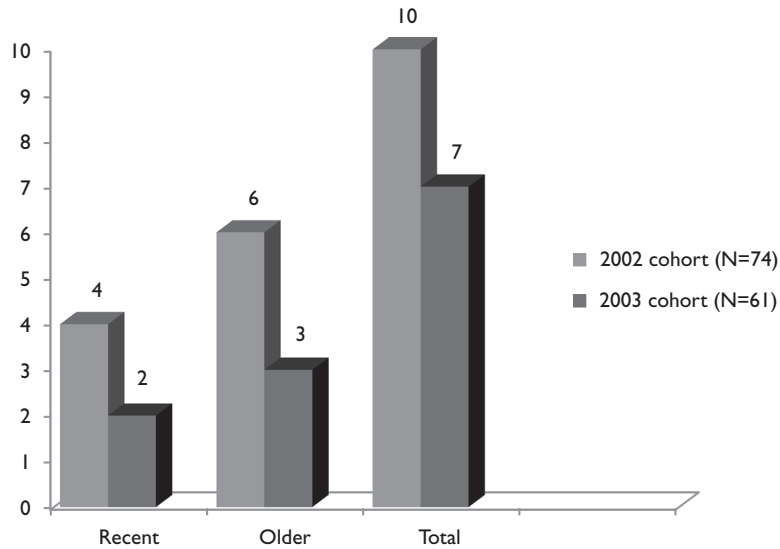


Figure 5.3 Column chart showing average number of journals used in assignment of two cohorts of crime psychology students

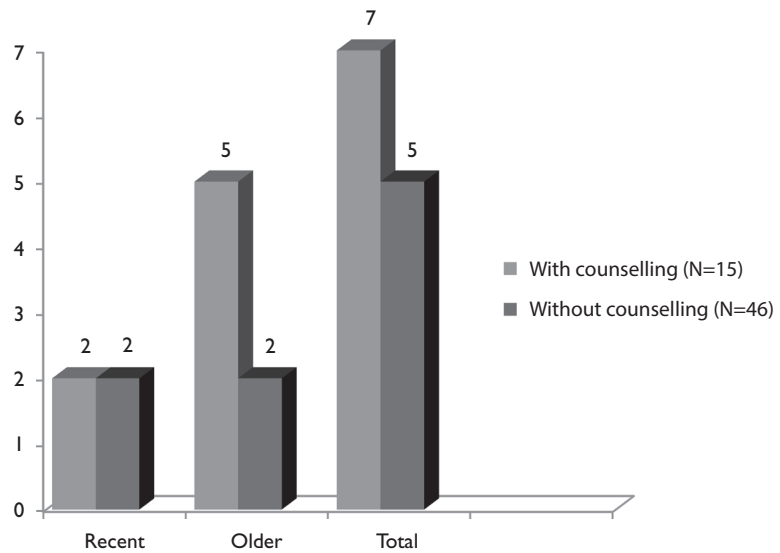


Figure 5.4 Column chart showing average number of journals used by crime psychology students who also took counselling psychology

Modifying future practice

A simple quantitative measure like this tells us some interesting things but what it did not do was to tell us why there were these differences in journal use. As you can see from the above, I keep having to speculate – which is one of the problems with applying a statistical approach to human behaviours.

We were also interested in finding out how effectively students were applying the information in their journal articles in their essays. A few feedback comments that I had made on the essays of the 2003 cohort of counselling psychology students were picked out by my research colleague and showed that all was not well:

> . . .you tried to do this but missed the golden opportunity of using the highly appropriate research papers that you cited.
>
> . . .used loads of research – you bombarded me with it but you did not say much about it – i.e. that's the evaluative part.
>
> . . .more critical analysis needed – you cited research but you did not say what had been done; what was the basis for the claims?

What was happening here? I had been successful in getting my students to use, or at least cite, more up-to-date journal articles in their essay, but in spite of my assistance on how to critically evaluate and apply a journal article to their PALS case study, they were still not doing this satisfactorily. In terms then of modifying my practice for the following year's cohort (2004), I decided that I would need to focus more on breaking down the critical evaluation and giving clearer guidance and maybe more practice. This was a direct consequence of carrying out this study and meant that I did, in fact, modify my practice when teaching the next cohort of counselling psychology students. In so doing another issue emerged for another cycle of action research. . .

Disseminating my findings

This study was reported as a research paper at a psychology learning and teaching conference (Norton, Norton and Thomas, 2004), but in the event we did not take it further and develop it into a journal article. This was mainly because in statistical terms, the results were slight so it would be unlikely to be accepted by any journal editor. The other reason was that our pedagogical interests had moved into other areas. This of course happens with any area of research, but what is so special about action research is that it can, and does, impact your practice. In my case this was carrying forward an understanding that students need to be taught quite directively how to use journal articles in their own academic writing.

Overall conclusion

By comparing two research approaches to the same problem using the acronym of ITDEM'D I have demonstrated the many ways that a troublesome issue or

concern can serve as a trigger to carry out a small-scale study in your own professional context. Beginning an enquiry is the most important step to take, regardless of the approach you take or the methods you use. If you actively reflect on the process and your findings, you will learn a significant amount about your own teaching and your students' learning. You will also learn how to refine your research design and carry out more studies that could well form the foundation for further cycles of action research.

Synopsis

- In this chapter, I have described how a pedagogical action research study can be carried out with results that not only can be presented at learning and teaching conferences but which also can help improve teaching practice.
- I chose a student learning issue that will probably be recognized by many readers: the problem of students not using enough primary sources (journals) in their written assignments.
- I have used the acronym of ITDEM'D to explain a simple, practical, step-by-step process that will get you started on thinking about designing and carrying out your own pedagogical action research study.
- ITDEM'D stands for: Identifying the issue, Thinking of ways to tackle it, Doing it, Evaluating the effects, Modifying practice and 'Disseminating your findings.
- By presenting two quite different methodological approaches to the same issue (one hypothetical, the other real) I have tried to show how ITDEM'D can be readily adapted to a type of investigation that feels comfortable for you and best fits your own context.

Activity answers

1. No. This is a double-barrelled question (i.e. it has two parts) so you should think of breaking it down into two sub-questions to disentangle these two quite distinct issues. Researching the concern of 'too much information' is over general and needs refining.
2. No. This would be impossible and the question would not be researchable. You might, however, explore with colleagues and/or students their perceptions of 'expert teachers'.
3. No. You would need to be more specific about the ways in which you would make an assessment task easier, and you may well have to define what you actually mean by the concept of 'easy'.
4. Yes. This would be a researchable question, but you might want to make it more specific (i.e. helpful to colleagues who are new to marking, for example).

5. Yes. This would be a good starting point for an exploratory study.
6. No. 'Interesting' is too vague a concept.
7. Yes. This is a specific and researchable question that applies to your own context.
8. Yes. Again this is specific and well situated in the context of your own practice.
9. Yes. This could be a good starting point for an exploratory investigation and again, it is specific to your context.
10. No. This is too general and makes too much of an assumption.

Further reading and resources on practical approaches to action research

Websites

The range of resources on the internet is considerable and trawling through them can sometimes be quite a demoralizing experience as information overload can rapidly overcome you. Rather than add to your overload at this stage, I am going to recommend just three sites that I have found over the years to be very helpful.

Jean McNiff's website

Available at www.jeanmcniff.com/ (accessed 28 March 2018).

For someone just beginning to explore the potential of educational action research, this is an excellent website – friendly, informative and scholarly – with resources to help new action researchers. There are links to McNiff's books and papers, many of which are downloadable, as well as examples of action research theses at masters and doctoral level. A useful starting point might be the downloadable action research booklet below.

Action research and action learning for community and organizational change

Available at www.aral.com.au/ (accessed 28 March 2018).

This is the website of Bob Dick, an Australian who describes himself as an independent scholar, an educator, facilitator, coach, and change consultant. It is well worth exploring but since it is related to action research in all fields, you may have to pick and choose a little. It is particularly useful for those who want some background to the philosophy of action research, some of the debates that surround its use, as well as advice on planning and running action research projects. (See the pages on action research and related resources and those headed 'Leading action researchers say why AR'.)

Jack Whitehead's website

Available at www.actionresearch.net/ (accessed 28 March 2018).

This website is a scholarly and very rich source of resources and writings of Jack Whitehead who is known for his conception of a living educational theory and connecting it with an action research methodology.

Journal for publishing pedagogical action research

Many subject-related and generic journals in the field of higher education publish action research studies but *Educational Action Research* is one that is dedicated to action research in education at all levels.

Educational Action Research published by Taylor and Francis, frequency: five times a year. Available at www.tandfonline.com/toc/reac20/current (accessed 28 March 2018).

This is a fully refereed international journal concerned with exploring the dialogue between research and practice in educational settings. It is supported by the Collaborative Action Research Network (CARN). It is available in print and online and you can publish open access.

Chapter 6

What research methods should you choose?

Introduction

Carrying out your first action research study can be challenging, particularly if your research experience is not in the social sciences or in education. In this chapter, I introduce some of the more well known methods of enquiry in these fields. To recap the context of pedagogical action research, the fundamental aim is to research:

- some aspect of your teaching or assessment practice;
- some element of your students' learning experience or academic performance;
- some other pedagogical issue that directly relates to your practice.

Writing a research protocol

Fundamentally, as with all practitioner research, the goal is to develop, evaluate and improve your practice. In deciding on the most appropriate research method, there are many questions to ask yourself. One of the most common pitfalls for the inexperienced action researcher is to embark on a project without thinking through the aims, methods and possible analyses. If it is at all possible, I would recommend writing a skeleton research protocol. This has two benefits:

1. It helps clarify your thinking at the beginning of a research idea.
2. It acts as a written reminder of your research aims.

This might seem unnecessary at the time, but halfway through a piece of research, it is easy to lose track of your original research aims and start spinning off in a multitude of different directions. This common difficulty can reduce what was originally a carefully designed research study into an unformulated and incoherent set of research findings, which bear little relation to your original research questions. That said, I do also acknowledge that one of the characteristics of action research is that it is messy. It is likely to branch off into different lines of enquiry,

particularly if it is participatory or collaborative (Cook, 2009). In such cases a protocol would serve as a useful record of earlier deliberations and the original agreed research aim/s.

Writing a research protocol has two further advantages:

1. When it comes to writing up the outcomes of your research for dissemination, you will already have the outline of a paper in place. This will save a great deal of time.
2. It will provide you with much of the required detail for the necessary ethics application.

All protocols differ slightly. In many cases they are called research proposals, especially if you are seeking funding from external organizations. In these cases you will be given a specific format to comply with. Advice can also be found on the internet, where many institutions publish their own guidance. When using a protocol for your own purposes, however, such as an ongoing record and road map of your research, it is useful to include the details presented in Appendix E.

Quantitative or qualitative?

For the remainder of this chapter, I will focus on the most frequently used quantitative and qualitative research methods used in pedagogical research. Generally speaking, qualitative methods are used in action research studies but there is a case to be made for using at least some numerical measures (Fee, 2012). More often when quantitative designs are used in action research they tend to be part of a mixed methods design. Nevertheless, I am spending time on quantitative research methods because it was by using these that I personally came to be an action researcher. I believe that when you are trying to fit in pedagogical action research alongside all your other professional commitments then it is helpful to start from what you already know.

In the spirit of action research my approach has always been to reflect on what I had learned from such studies in order to improve my learning and teaching practice. For those of you who feel more comfortable with quantitative methods but have little experience in applying them in a pedagogical research study, then my basic outline below might be a useful starting point. Later in the chapter, I describe some basic principles of thematic analysis and content analysis, which are frequently used in qualitative research.

In order to make both approaches as interesting and relevant as possible, I present a fictional vignette that represents a frequently experienced problem in university teaching.

The case of Dr Jones

Dr Jones is a recently appointed lecturer in Sport Psychology at the University of North West England: a 'new' university that was originally a polytechnic. She is an authority on dyspraxia and the 'clumsy child' syndrome, having obtained an outstanding PhD, written several books on the topic and given keynote addresses at international conferences. She has also published extensively in the top-ranking journals.

In addition to this impressive track record, Dr Jones has also brought research funding into the department and is currently working on evaluating a new coaching system for children with dyspraxia and related syndromes. As a new lecturer she has somewhat unfairly been given a full teaching load as well as her research responsibilities. One of the classes she has been asked to teach is an introductory module to second-year Sports Studies students on childhood disabilities.

After four weeks of this module, Dr Jones goes to see her head of department in some distress. Apparently the number of students attending has dropped from the original 80 to fewer than 30. The students who are still on course do not, according to Dr Jones, pay much attention in the weekly lectures that she so carefully prepares to be at the cutting edge of knowledge. She is disappointed that her students clearly have not done any of the journal readings she recommends for the lectures, and they do not participate at all when she invites them to respond to her questions. Even worse are the weekly seminars where the same pattern is even more obvious and Dr Jones finds herself having to do all the talking to fill the silences.

Of course there might be any number of reasons for this state of affairs and, like all pedagogical problems, there are layers of complexity that preclude any simple solutions. It may, for example, be due to Dr Jones' inexperience in facilitating students' learning, or it may be that her students do not see the relevance of her course in their overall Sports Studies programme. However, let us suppose that Dr Jones is willing to carry out a pedagogical action research study and focuses on the specific following problem:

> Students do not read for seminars.

Using the decision chart shown in Figure 6.1 you can follow the basic principles of some of the more common research methods that she might choose. While this is only an outline, I have tried to give you sufficient guidelines to carry out a perfectly sound research study of your own.

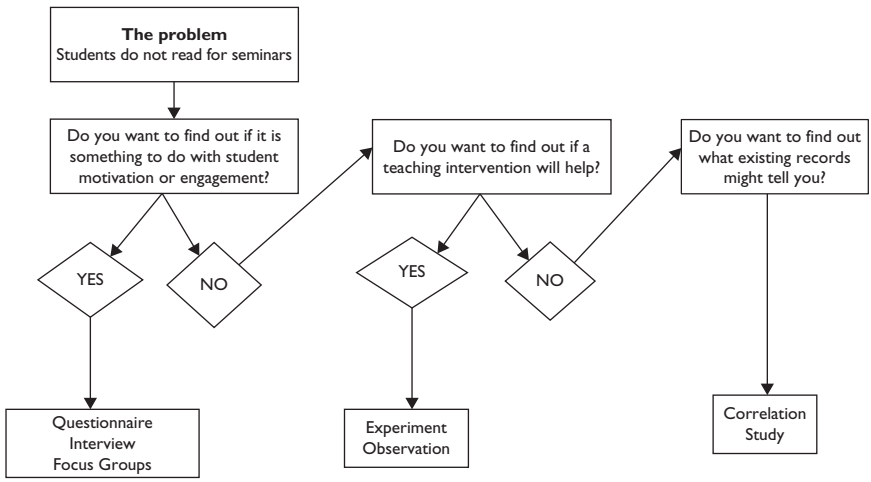


Figure 6.1 Decision chart for deciding on appropriate research method

Scenario 1: Dr Jones decides that the issue is something to do with her students

Let us imagine that Dr Jones decides it might be something to do with her students' motivations, behaviours or interest and wants to do a quantitative study using a survey approach.

Survey research: taking a quantitative approach

There is some confusion between the terms of questionnaire and survey. One of the easiest ways to think of the distinction is that a survey is the process for collecting and analyzing data, whereas a questionnaire is a tool that can be used in the survey for the collection of that data. A useful resource pack on surveys and questionnaires is provided by Mathers, Fox and Hunn (2009). Although it was written for health and social service researchers, it provides a rich source of information that can equally well be used by educational researchers.

Survey research covers both questionnaires and measurement or attitude scales. It is useful when you are interested in analyzing quantitative data from a large number of people.

Advantages and disadvantages

The advantages of survey research are that respondents are more likely to be honest in their responses, particularly if they are anonymous. If your respondents

are your students then anonymity will help to minimize some of the effects of power relations such as your teacher role and your authority. Paper-based or electronic questionnaires can be completed in the respondents' own time and at their own convenience. The disadvantage is that you generally get only a 30–40 per cent response rate which is a factor to consider. A common difficulty in any type of survey research is that because it is relatively easy to think up lots of questions, you may find out later that the information they provide is un-analyzable, or provides you with information that you do not need.

There are two main types of instrument to distinguish when considering survey research:

- the questionnaire – which is to *find out* information about people's habits, behaviours, demographics;
- the attitude scale or inventory which is to *measure* people's attitudes, beliefs or behaviours.

A well-known example of the latter in the field of higher education research is the Approaches to Studying Inventory, which has gone through much iteration and is currently known as the ASSIST. This inventory has been designed to measure students' approaches to studying, concepts of learning and studying practices (Tait, Entwistle and McCune, 1998). A version of it, together with an account of its development, is available from the ETL project website (Enhancing teaching-learning environments in undergraduate courses) available at: www.etl.tla.ed.ac.uk/questionnaires/ASSIST.pdf. You may need to scroll down a few pages before you come to the ASSIST inventory itself.

The ASSIST could be a useful tool for Dr Jones to use, as it would provide her with data that would help her to understand her students' habits, perceptions and practices. If she found, for example, that the majority of her class scored highly on the surface, apathetic dimension, one characteristic of which is 'lack of purpose', she could think about using assessment as a 'carrot' to engage them more. She might, however, want to explore a little deeper and consider using digital technology to make her course more relevant to her Sports Studies students. Let us imagine that she decides to ask them in groups to produce a five-minute video on YouTube on sport for disabled youngsters. To evaluate their perceptions of this task, she might prefer to devise her own questionnaire, rather than use a published one.

The questionnaire

There are two main types of question Dr Jones might use in her own questionnaire:

1. Closed questions are used if Dr Jones wants to have some measurable count of her students' self-reported behaviours.

Question: 'How many hours did you spend on reading up in the preparation week for your video task?'

Response: This can be in the form of an open-ended response, which has the advantage of being an accurate measure such as 12 hours, but she would lose the ability to easily categorize a large range of answers. For example, how would Dr Jones present the following 40 answers in a way that would enable her to draw any conclusions?

12, 5, 2, 5, 3, 6, 9, 8, 7, 4, 1, 5, 1, 2, 4, 8, 1, 9, 4, 3, 1, 11, 7, 5, 5, 3,7, 6, 2, 5, 4, 20, 2, 8, 6, 3, 1, 4, 6, 4.

As you can see, this string of numbers gives Dr Jones very little sense of the pattern of responses or the typical time her students spent on reading. An alternative can be to present a series of options which her student would be asked to circle or tick, for example:

1 hr or fewer	2–5 hrs	6–9 hrs	10+ hrs.
5	20	12	3

Immediately Dr Jones can see that the majority of students did between two and nine hours of reading preparation with just half of them spending between two and hours. This has the advantage of being easier to make sense of, but it loses precision. One of her students spent a huge amount of time reading (i.e. 20 hours) but this would be largely lost in the 10+ hours category.

A hybrid response set is one which sets out categories and also provides an 'other' category for respondents whose answers do not readily fit those pre-determined categories. In this way, Dr Jones could preserve the advantages of both methods:

'Other? Please state the number of hours:'

Analysis: Descriptive statistics such as frequency counts or visual representations such as pie charts, histograms and bar charts are all relatively easy ways to analyze these types of responses (see Chapter 8). This information would be helpful to Dr Jones by giving her some empirical evidence of what preparation her students did in the video task which she might consider as a proxy for student engagement.

2. Open-ended questions are used if she wants to find out how her students think or feel about the task rather than some sort of measurement. These produce qualitative rather than quantitative data.

Question: 'What did you think about designing your own video task?'

Response: In this type of question, the respondent writes an unstructured answer, which may or may not be word-limited. For example, one of Dr Jones' students might have written the following:

> It was fantastic. I really enjoyed working with my group and we were all very proud of the video we produced. We concentrated on our local swimming pool which has special sessions for disabled children. We filmed the children and interviewed some of them as well as their parents. I learned so much. I learned a lot about how disabled children feel, as well as how to carry out good interviews, the ethics involved and the mechanics of producing a video. It was incredibly motivating to see the children smiling for our cameras. Since making our video, one of the lads and me have volunteered to be helpers at these swim sessions. I know though that some of my friends didn't enjoy this task as they were in groups where they couldn't agree on the topic or where there were freeloaders who weren't pulling their weight.

Analysis: Like all unstructured material, the choice of analysis is considerable, but two commonly used methods Dr Jones might use would be thematic or content analysis (see Chapter 7).

The attitude or measurement scale

These look like questionnaires but are designed to produce a measurement of something. In this respect they are more like standardized tests. To be of any value, they need to be rigorously tested for validity and reliability. Such scales are designed as a series of statements, known as items, to which the respondent has to tick or circle a pre-determined response. In Dr Jones' case, if she wished to ascertain her students' attitudes to learning, she could use the ASSIST as described above, or she might prefer to construct her own scale, which could be tailored to her context. An example of a statement and possible response sets is detailed below:

***Statement*:** 'In the childhood disabilities module, we are expected to learn the topics ourselves.'

Response: There are many forms of response set but the three most widely used are described here.

1. The **Thurstone scale**, which has two response sets, for example:

   > In the childhood disabilities module, we are expected to learn the topics ourselves.

   True/False
   Yes/No
   Agree/disagree

2. The **Likert scale** produces a differentiated scale of responses (usually five or six) which allows for an overall score where a high score would indicate a strong positive attitude and a low score would indicate a strong negative

attitude, for example: 'In the childhood disabilities module, we are expected to learn the topics ourselves.'

Strongly agree	Agree	Unsure	Disagree	Strongly disagree
5	4	3	2	1

The Likert scale can also be used to measure the frequency of a behaviour, for example: 'In the childhood disabilities module, we are expected to learn the topics ourselves.'

All the time	Very frequently	Frequently	Sometimes	Infrequently	Never
5	4	3	2	1	0

Here the Likert scale has been adapted to include a score of zero, since it seems intuitively wrong for 'never' to count for anything.

3. The **Osgood semantic differential scale** is similar to the Likert scale in that there are differentiated response options (five or six), where the respondent ticks the box that is closer to their preferred end. Its advantage is that it describes the other end of the scale where Likert only describes one end, for example:

In the childhood disabilities module, we are expected to learn the topics ourselves.	□□□□□	In the childhood disabilities module, the lecturer gives us all the information we need for the topics.

However, as this example shows, it is often difficult to describe the other end of the scale without becoming impossibly wordy.

Designing a robust attitude scale is technically quite challenging but not impossible. If you are interested, in Appendix F I describe the procedural stages that you will need to complete.

Summary

In this section I have described some of the advantages and disadvantages of survey research. This approach will give you a certain type of data, usually but not always quantitative. However, if you are more interested in finding out how students experience their learning you might wish to consider a more qualitative approach such as interviewing.

Interviewing: taking a qualitative approach

Dr Jones could learn a great deal from her students by talking to them about their learning, and their perceptions of her course, but in such a face-to-face situation they may not tell her the truth. It may therefore be more productive to carry out an interview study, possibly using a research assistant. Research assistance can be

costly, but there are many graduates, particularly in social sciences subjects, who are keen to gain research experience and charge very little, sometimes doing it for free. This is not exploitative if they get their names on any publications. It might also be worth Dr Jones considering the potential benefits of a collaborative action research study and asking her students to become research partners. Student-led research is becoming increasingly common and has many benefits (see for example Tan, Joyce-Gibbons and Loughlin, 2017). In her class of 80 students she may well get some willing volunteers who would undoubtedly add value to her research design by bringing their own perspectives and ideas.

Advantages and disadvantages

Interviewing is a very popular research method as it seems deceptively easy. It also appeals to those researchers who are interested in the 'lived experience' of their research participants. Interviews do, however, pose their own drawbacks as they are extremely time-consuming both to carry out and to analyze. Typical research interviews would take from about 20 minutes to an hour or more. If Dr Jones was to take the minimum time of 20 minutes and wanted to get responses from all her students, it would take her over 26 hours of solid interviewing. Then there is the problem of recording interviews. The best advice is to record and transcribe so as not to miss anything important, but the usual formula for the time needed to transcribe audio-recorded interviews is around eight hours for every hour of recording. Dr Jones' research workload has just risen to a further 208 hours and she has not begun to analyze the data yet.

There are apps and audio transcription software available that can turn your recordings into text, so it might be worthwhile exploring these if your time is limited. The disadvantage is that they are not always as accurate as a human transcriber and you lose the immediacy of listening to the recordings yourself where a chuckle or a lengthy pause might remind you about the context of what was being said. Assuming Dr Jones wishes to transcribe herself, she can either choose to interview a manageable sample of her students on a one-to-one basis or conduct focus groups, which are group interviews typically consisting of between six and twelve people.

Focus groups have their own advantages and disadvantages: they are useful for capturing a whole range of opinion rather than a consensus but they can be dominated by one or two outspoken individuals. Krueger and Casey (2015) have written a useful book entitled *Focus groups: a practical guide for applied research* if you want to find out more, but here I will focus on interviewing.

Types of interview

There are three basic types of interviews: structured, semi-structured and unstructured; and the one Dr Jones chooses depends on the purpose of her research.

1. ***Structured interviews*** are like a spoken form of questionnaire where the questions are pre-determined, but their advantage over the questionnaire is that they allow you to clarify questions that the respondent does not understand or misinterprets. The same degree of care in constructing a questionnaire has to go into a structured interview schedule, as extra questions cannot be added or others taken away in the actual interview session. This is because the aim of this type of interview is to get a standardized way of comparing respondents. Responses can be as for questionnaires, either pre-set (Thurstone, Likert, Osgood) or a combination, with some open-ended responses allowable, for example:
Structured Question:

> Do you attend the childhood disability seminars:
> all the time,
> very frequently,
> frequently,
> sometimes,
> never?

Open-ended question: 'Any other pattern?'

2. ***Semi-structured interviews*** follow an interview schedule with pre-determined questions but are more flexible than a structured interview in that you use probes designed to elicit further information when necessary. The purpose of a semi-structured interview is to understand the respondent's point of view; so Dr Jones would use open-ended questions to enable the students she interviews to talk more freely, for example:
Main question stem:

> Do you think you are expected to learn the topics in childhood disabilities yourselves?

Probes:

> In what way?
> Can you tell me a little more about this?
> Can you think of an example?

Often the probes will not be needed as the purpose is to give some freedom for the interviewees to express themselves without restrictions. They can be useful if the interviewees dry up or if they deviate away from the topic in question and need gently bringing back. Semi-structured interviews are useful in their own right, as a way of gathering data on your respondents' thoughts and perceptions of the topic in question. They can also be used to generate items for a questionnaire study if you want to carry out a large-scale study.

They can be equally useful for following up a questionnaire study where you want to get some richer data than can be gained from responses on a questionnaire or when you want to explore some of the findings that the questionnaire study has thrown up. This would be a mixed methods approach. If, for example, Dr Jones found from a questionnaire study that her students were saying there was too much work and yet at the same time were studying for less than an hour a week, she might wish to explore this anomaly in interviews with those students where the discrepancy seemed particularly large – if she could get hold of them!

3. Unstructured interviews are for research studies where the focus is to gain insights about the respondents' world and lived experience (e.g. phenomenography). Such interviews tend to be very long. They require a good deal of trust on the part of the interviewee and a considerable amount of experience on the part of the researcher. If you have never carried out any interviews before, it is probably not a good idea to start with an unstructured interview. Typically though, this type of interview would begin with an explanation of what the research was about, for example:

> I am working for Dr Jones as a research assistant to explore in depth with her students what they feel about the course on childhood disabilities. What we are really interested in is what it is like for *you*, rather than what we might think as researchers. Of course you might feel embarrassed if you have negative things to say or you might be worried that your views will somehow be used against you, but this is categorically not so. Dr Jones will not see these transcripts, only some general themes that emerge from this interview and the others I am conducting, so you will never be identifiable to her or to anyone else in the university. Are you happy to proceed with a few general questions about the course?
>
> How long have you been a student?
> What interested you to take up sports studies?
> Are you full time or part time?
> Do you work as well as study?

Then when these easier general questions have been asked and the student is happy to proceed, the fundamental question to be explored can be asked. In this case, it might be:

> How has this course been for you?

In such an interview, many unexpected insights might arise because the interviewee is can set her/his own priorities and talk without restrictions about aspects of the topic that are really important to her or him. Such freedom does, however, make analysis and identifying commonalities more difficult. This will be discussed in more detail in Chapter 7.

Summary

Whatever type of interview you decide to carry out, there is a common procedure to follow which involves:

- putting the interviewee at ease;
- explaining the nature of the research;
- outlining how the data will be used;
- gaining permission for the interview to be audio recorded and/or for you to take notes.

A good practice is to offer your interviewees the opportunity to see the transcription or your notes so they can alter anything they feel was inaccurate. This can be especially useful if you carry out an interview by telephone, as you do not have the usual cues of body language to know whether you are interpreting what the interviewee says correctly.

Another good practice is to have a dry run of the interview questions beforehand with a willing participant. It is surprising how difficult it is to take on the role of researcher in an interview, as it is not like a conversation where both take part equally. Practising before you 'go live' will pay dividends. I remember when I carried out my very first research interview as an undergraduate; I suddenly became stiff and stilted and I started using quite pompous language that must have been quite intimidating. How many participants you should interview depends very much on the purpose of your research and the type of analysis you intend to do. It has been known, for example, to publish articles based on detailed qualitative analysis on just one interviewee, but this is rare.

Scenario 2: Dr Jones decides the issue is related to her teaching

It may be that Dr Jones decides to look for ways to improve her teaching. She could think of designing some sort of intervention to encourage her students to engage more with the course and with the work that is required. Figure 6.1 shows that the most usual way of testing whether or not an intervention has worked is to design an experiment. Experimental research springs from a positivist paradigm where the aim is to establish a cause and effect. Usually the researcher starts with a hypothesis and then designs an experiment to test it. In pedagogical action research, the most likely type of situation to lend itself to an experimental design is that of some sort of teaching intervention. At this point I think it is important to reiterate my central argument that experimental design and quantitative methods, whilst being marginal to the mainstream action research discourse, do have an important role to play in pedagogical action research, particularly when you are looking to see if a teaching intervention is effective. It is also worthwhile considering the epistemology of your discipline or

professional field, when planning what research methods to use. It may be if you are building a career in a scientific field, for example, that you prefer to stay with scientifically orientated methods within your action research study. For interested readers, I discuss my own journey from positivism to interpretivism to praxis in an article I wrote for psychology teachers (Norton, 2014a).

Dr Jones' pedagogical problem of students not preparing for seminars and therefore not contributing in class is one that is familiar to many of us. There have been many ingenious interventions, but relatively rarely are the effects of these interventions actually measured. This is the essential difference between 'show and tell' accounts of practice, where often the only 'measure' of whether or not it works is that of student satisfaction, and pedagogical research, where there is some measure of improvement. This scenario of Dr Jones fits very nicely into the cyclical model of action research because the results of her first experiment could lead into her formulating a further hypothesis or hypotheses to be tested.

Experimental designs

Let us suppose Dr Jones decides to set up a discussion forum on a virtual learning environment in order to encourage engagement with the topic. This can then be tested in one of the following three experimental designs: independent groups, matched participants or repeated measures.

1. Independent groups design

This would be used to test Dr Jones' hypothesis:

> Students who prepare for seminars by taking part in an electronic discussion forum will perform better in the examination than students who prepare by extra individual reading without discussion.

In using an experimental approach, the classic approach would be to establish a cause and effect, but in reality, educational research is unlikely to be this clear-cut, as we shall see. Suppose that Dr Jones decides to divide her class into two groups of 40, where one group will be asked to take part in the electronic discussion forum and the other group will be given extra reading. This is the simplest type of independent groups design and ensures that all her students receive some form of intervention, which is an important ethical concern.

A more sophisticated design might involve three or more groups. Dr Jones might, for example, wish to examine the effects of extra reading as well, so she would need three independent groups: two with the different seminar preparation conditions and one where there is no experimental condition, referred to as the control group. How Dr Jones allocates her 80 students to each group is crucial, to avoid any 'extraneous' or 'nuisance' variables such as self-selection

might cause. It would not be a good design, for example, if all the students in one of her groups happened to be of one gender, or one ability level.

The experiment also needs to be carefully devised so that an appropriate measure of effect is formulated. This is called the dependent variable. In Dr Jones' case, she might decide to use her students' overall examination grade, which would be a fairly crude measure. She might prefer to use the marks given to specific examination questions, which were the focus of a given seminar. This would be a slightly more sophisticated measure, but it still has the disadvantage that it allows for many other explanations for enhanced performance. Another measure might be some analysis of the examination scripts themselves for quality of thinking, perhaps using Biggs and Collis' (1982) SOLO taxonomy, available at: www.johnbiggs.com.au/academic/solo-taxonomy/. There are many resources on the internet giving more explanation of the model and suggesting how it can be used; one such is called 'A Primer on Learning Outcomes and the SOLO taxonomy' by Potter and Kustra (2012) www.uwindsor.ca/ctl/system/files/PRIMER-on-Learning-Outcomes.pdf.

As I mentioned earlier, an experimental design is usually employed to establish a cause and effect by testing a hypothesis, but this is not a typical approach in action research. You will need, therefore, to analyze your results statistically to find out if your hypothesis is supported and how significant this is. To fit such a study within an action research framework, you will then need to reflect on your findings and their implications for your practice. This is an essential part of the pedagogical action research process. In the case of Dr Jones, for example, if she found her electronic discussion group did significantly better than the extra reading group, then this would inform her practice immediately and she might wish to share this intervention with other colleagues. Alternatively, she might prefer to use her findings to instigate further cycles of enquiry before she feels ready to disseminate.

What is more likely to happen in your own pedagogical research is that you find your results are not that clear-cut, so you would then undertake a second cycle of action research, possibly refining your design and/or improving your intervention. I used an example of my own research to show how this works in Chapter 5. One of the potential difficulties with interpreting Dr Jones' findings is that one group may simply be more able or more motivated than the other and it is that factor, rather than the intervention, which has caused the improvement in examination performance. One solution to this problem is to use another experimental design called the matched participants' design.

2. *Matched participants design*

In order to take care of nuisance or extraneous variables such as ability or motivation, you can allocate your students to each group matched on these two

variables as far as you are able. This sounds deceptively simple, but is in fact fiendishly difficult to do, which is why this design often features one variable only.

Let us imagine that Dr Jones is testing her same hypothesis:

> Students who prepare for seminars by taking part in an electronic discussion forum will perform better in the examination than students who prepare by extra individual reading without discussion.

Let us also suppose that she wants to match her students firstly for ability. Her immediate problem is how will she measure 'ability'? She could give them all an intelligence test or some other test of intellectual ability. More practically, she might consider their past academic performance so far. Again, there are a number of choices she can make. She could use the General Certificate of Education Advanced level grades, or their overall performance in year 1, or perhaps some formula calculated on an aggregate of the two.

If Dr Jones decides on first-year overall grades as an indicator of her students' ability, she then needs to rank order her students from highest performance to lowest performance and then systematically go through the ranked list allocating them into her two groups. To illustrate how this works, I have devised Table 6.1, which shows just the top eight out of her 80 students.

If, however, Dr Jones wants to take both ability and motivation into account, assuming she has been able to give the students some sort of motivation test, she will need to do a similar ranking and then a composite ranking (assuming she thinks both variables are equally important before she allocates students to the experimental groups). I have illustrated what this might look like in Table 6.2.

Once again, I have done this to show only eight students but I have taken hypothetical rankings from all of her 80 students, as it would be extremely unlikely that the same eight most able students would also get the eight highest scores in the motivation test. Then on the basis of the composite rankings,

Table 6.1 Allocation to experimental groups based on ability

Student	*Grade*	*Rank*	*Group allocation*
Andy	A	1=	Electronic discussion
Sylvie	A	1=	Extra reading
Joanne	A-	3	Electronic discussion
Gary	B+	4=	Extra reading
Jack	B+	4=	Electronic discussion
Hakim	B	6	Extra reading
Greg	B-	7	Electronic discussion
Colin	C+	8	Extra reading

Table 6.2 Calculation of composite ranking for ability and motivation

Student	*Grade*	*Rank*^{1}	*Motivation (out of 20)*	*Rank*^{2}	*Composite ranking* (^{1} + ^{2})*for allocation to experimental groups*	*Group allocation*
Andy	A	1=	10	30	31	Electronic discussion
Sylvie	A	1=	15	7	8	Electronic discussion
Joanne	A-	3	11	23=	26	Extra reading
Gary	B+	4=	12	14	18	Electronic discussion
Jack	B+	4=	8	42	46	Extra reading
Hakim	B	6	11	23=	29	Electronic discussion
Greg	B-	7	6	67	74	Extra reading
Colin	C+	8	17	8	16	Extra reading

Dr Jones could allocate her students to the experimental groups. Such a procedure, while time-consuming, would be rigorous and ensure an even match of ability and motivation in both groups as far as possible.

Should Dr Jones think that gender or age was an important influencing factor, then the process would be a little easier as there are only two categories (male vs. female or traditional vs. mature), but the principle is the same: she would be trying to even up, as far as possible, extraneous variables which might affect the results of her experiment.

Ethical issues

Both these experimental designs sit somewhat uneasily in a higher education context because of the obvious ethical issues they pose. The whole area of ethics in educational research is discussed in full in Chapter 10. Involving students in research that might potentially disadvantage them in work that is summatively assessed is not a defensible option, so how do you deal with it? There is an argument to say that we do not know which method will work best so provided students know that this is the case and agree to being selected for either group, then that is reasonably fair. You could not, however, justify a control group using this argument.

This is one of the difficulties of carrying out experimental research in a naturalistic educational setting. If you divorce the experiment from the students' course and set up an artificial context where nothing counts, these problems do not arise but the findings will not necessarily relate to the real context, which is the very point of doing pedagogical action research. The third experimental design is perhaps the best solution where you use the same students before and after the intervention. This is known as the repeated measures design.

3. *Repeated measures design*

Sometimes this is also known as a within-subjects design, where the same participants are measured twice, thus there is no worry about differences between the groups. At first glance, this might seem the best of the three designs as it also effectively sidesteps the ethical issues that the other designs raise, but it too has some disadvantages, such as order effects or 'carry over' effects (i.e. practice).

Dr Jones' research design for the same hypothesis

> Students who prepare for seminars by taking part in an electronic discussion forum will perform better in the examination than students who prepare by extra individual reading without discussion

might look something like this:

Semester 1
Stage 1 Examination performance[1] (baseline measure)
Stage 2 Discussion forum (intervention/first part of independent variable)
Stage 3 Examination performance[2]
Stage 4 Difference in examination scores (first part of experimental measure/dependent variable)

Semester 2
Stage 5 Examination performance[3]
Stage 6 Extra reading (intervention/second part of independent variable)
Stage 7 Examination performance[4]
Stage 8 Difference in examination scores (second part of experimental measure/dependent variable)

Dr Jones would then need to compare the difference in examination marks between performance on exam[1] and exam[2] in semester 1 with the difference in examination marks between performance on exam[3] and exam[4] in semester 2. If her hypothesis is supported, there will be a greater difference in semester 1 than in semester 2.

Of course, such a hypothetical design has many problems, including the need for multiple examinations, but this could be simplified to class tests or some type of formative assessment rather than formal examinations. However, there is still the problem, as with any repeated measures design, of order effects. In this case students may be getting better at examinations or may simply be more knowledgeable and do better in semester 2 regardless of the intervention.

One way you can deal with this is by counter-balancing the interventions. This would mean that half of Dr Jones' students would first take the discussion intervention and the other half would first take the extra reading in semester 1. This would then be reversed in semester 2. She could then confidently expect that any differences in examination performance were as a result of the

intervention rather than as a result of order or practice effects. Such a design does, however, bring us back to the problem of independent groups or matched participants. Dr Jones could therefore decide to circumvent such complexity by testing a simpler hypothesis that 'Students who prepare for seminars by taking part in an electronic discussion forum will show an improvement in examination performance.' In this case, there would be no need to investigate the effects of the extra reading intervention, or it could be tested with another cohort in a second cycle of action research.

Summary

If you decide to take an experimental approach in your pedagogical action research, the benefits are that you will have a research study where the evidence will be quantitative, and statistical analysis will allow you to interpret the statistical significance of your findings. You will still need to be careful in over-generalizing from your findings, as no matter which basic experimental design you choose, you are not working in a laboratory with inert substances. In the educational field, research with human participants is never straightforward and rarely produces clear-cut findings that cannot be challenged. It is also important to consider when doing this type of research that the educational context is always complex and ill-structured. This is one of the reasons why action research is so powerful, for a whole series of experiments with statistically significant results may provide a convincing argument for the efficacy of an intervention or modification to practice. They may also encourage you to reflect on wider issues related to the curriculum.

Observational research

Another way of finding out the effects of an intervention is to carry out an observational study. Dr Jones will have to think hard about what evidence she wants to collect and whether or not she wishes to test a hypothesis. Let us imagine that she decides to see if her discussion forum intervention affects student engagement in seminars and lectures.

When carrying out observational research you have to decide what behaviours you will observe, who will actually carry out the observations and how they will be recorded. In Dr Jones' case, we will suppose that she has decided she wants to observe the number of questions her students ask in each one-hour lecture over a semester. She has also decided she wants to observe the contributions that students make in each seminar over a semester. There are basically three types of observation that can be used:

1. **Direct observation**

This is where people know you are observing them, so students would understand that in the course of the lecture or seminar they were being observed. This has the advantage of no deception. Its disadvantage is that students may behave

artificially. In the teaching situation this is not too much of a problem, as the very nature of teaching and learning implies some sort of observation to see how students are learning by watching their behaviours.

2. **Naturalistic observation**
In this type of observation, people do not know you are observing them so are likely to behave much more spontaneously, which makes for more ecologically valid data. However, with this type of observation, consent cannot be obtained and there are ethical issues around infringement of personal freedoms and confidentiality.

3. **Participant observation (direct or naturalistic)**
In this set-up, the observer is actually a member of the group of people she is observing, so Dr Jones would need to employ some of her students as participant observers. The advantages of this approach is that it gives an 'insider's' view and so there is less chance of the observed behaviour being misinterpreted, since the observer is part of the group and engages in the same behaviours s/she is recording. The disadvantages are that the participant observers may identify too closely with their group to make objective recordings.

The observation process

You can carry out an observation process in any of the three types by:

a) ***Continuous monitoring*** (for the whole of the lecture/seminar session).This has the advantage of capturing all the occurrences of behaviours that are being looked for, but has the disadvantage of being time-consuming.
b) ***Time sampling*** when you record observations for five minutes in every 15-minute period, for example, or whatever time schedule suits your purposes. This has the advantage of being more manageable, but lacks completeness.
c) ***Event sampling*** where you simply record the occurrence of the specific behaviour you are interested in, for example, questions that ask for:

'more information'
'clarification'
'guidance on further reading'.

Recording observations can be done by simple paper and pencil means, but it is far more effective to video-record where possible, as this enables you to play back and be more accurate in your frequency counting. It also enables you to have more than one observer, so that you can calculate a measure of inter-rater reliability for at least a sample of the behaviours of interest. This effectively addresses any problems of observer bias.

The two most commonly used methods are percentage agreement and Cohen's (1960) kappa coefficient. The first method is the ratio of the number of times the two observers agree divided by the total number of ratings performed. It can be calculated by hand but it does not correct for the possibility that your agreement has happened by chance. Generally speaking, 70 per cent agreement is considered necessary, 80 per cent is adequate and 90 per cent is good (Hartmann, 1977; House, House and Campbell, 1981).

For Cohen's kappa, it is advisable to use a statistical package, but basically it is calculated by the observed agreements minus the expected agreements divided by 1 minus the expected agreements According to Landis and Koch (1977) more than 0.8 is a good agreement, 0.6–0.8 is substantial, 0.4–0.6 is moderate and 0.2–0.4 is fair.

All the above observation methods are simple and straightforward procedures for ascertaining students' learning behaviours. The recent rise of learning analytics and educational data mining offers a great opportunity to accurately capture students' learning in a much more powerful way (Hwang, Chu and Yin, 2017). This is such a huge and fast-developing field it is beyond the scope of this book. However, I have indicated at the end of this chapter some useful literature and further resources, if you are interested and you work in an institution where educational data mining is possible.

Summary

If carried out well, through careful planning and taking a systematic approach to objectively observing and recording behaviour, observation studies can be both valid and reliable because of their high ecological validity.

Correlational studies

Supposing Dr Jones has neither the time nor the inclination to introduce an intervention, she could still do some correlational research analysis by deciding to use data that already exists. See Figure 6.1. This might be a precursor to some action research study in the future. She might, for example, wish to find out if there are any relationships between lecture attendances, seminar attendances, average hours a week spent socializing, examination marks and coursework marks.

Correlational research is not a research method but a statistical technique. It is used to show if there is a relationship between two independent behaviours or measures. This relationship can be positive where you would expect a high score in one to be related to a high score in the other. I have constructed Table 6.3 to illustrate some potentially important variables that would interest Dr Jones. Immediately, just by looking at these data, we can see that Anne, Bob and Carl are high flyers whose attendance is good and who spend relatively little time socializing. Not surprisingly their course and exam marks show that they are high achievers. When we look at the lower end of the academic performance measures

Table 6.3 Dr Jones' records on attendance, socializing and academic performance (exam and coursework)

Student	*Exam performance marks*	*Course work marks*	*No of lectures attended*	*No of seminars attended*	*No of hours per week socializing*
Anne	85	88	15	10	5
Bob	78	65	12	2	4
Carl	72	68	15	4	3
Dick	68	55	14	9	9
Eve	65	52	8	6	8
Fay	62	66	6	14	5
Ged	58	52	5	8	7
Hal	55	55	4	1	8
Jane	52	58	4	13	16
Kay	48	48	3	11	15
Len	45	40	5	3	20
May	42	44	6	7	18
Nan	38	38	2	5	21

we see that Len, May and Nan are the students who spend the most time socializing and have the lowest attendance records. In between these two extremes, the picture is less clear, which is why a correlational analysis can be helpful.

For example, Dr Jones might expect a positive relationship between the number of:

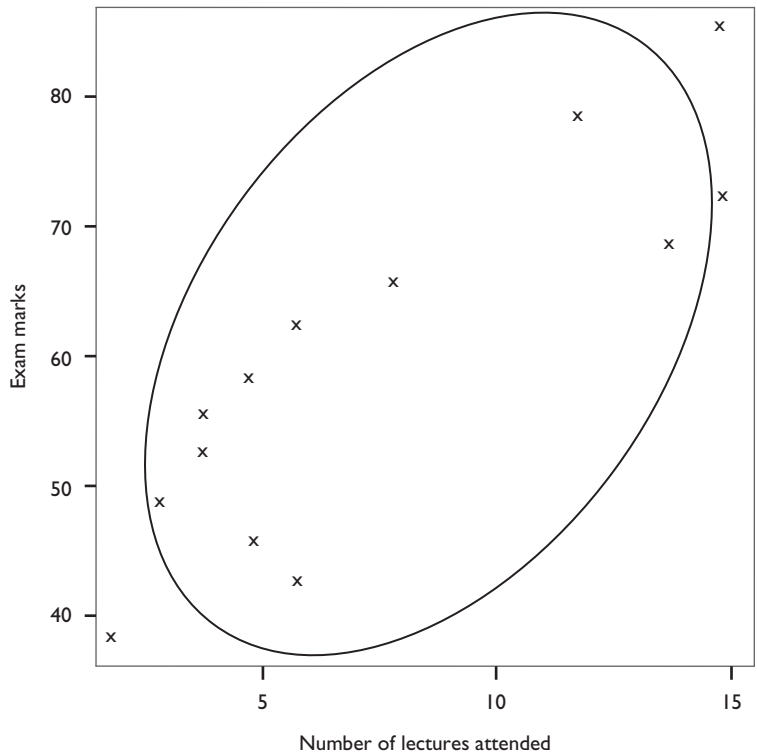
- lectures attended and examination marks;
- lectures attended and coursework marks;
- seminars attended and examination marks;
- seminars attended and coursework marks.

Correlations may also be negative, where you would expect a high score in one measure to be related to a low score in the other. For example, Dr Jones might expect a negative relationship between the number of:

- average hours a week spent socializing and examination marks;
- average hours a week spent socializing and coursework marks;
- average hours a week spent socializing and number of lectures attended;
- average hours a week spent socializing and number of seminars attended.

The degree of the relationship can be displayed visually in a scattergram which will also enable you to estimate the strength and direction of positive or negative correlations or if there is no correlation at all. See Figures 6.2, 6.3 and 6.4 for an example of each.

Without doing any statistical analysis, Dr Jones has a picture that shows her that there seems to be a positive relationship between exam performance and the number



By drawing an overall shape to fit in as many of the plotted points as possible, a visual picture of a positive correlation is shown where the oblong tilts from bottom left to top right.

Figure 6.2 Scattergram showing a positive correlation between number of lectures attended and exam performance

of lectures attended (Figure 6.2) and a negative relationship with the number of hours spent socializing (Figure 6.3). This might well be what she was expecting. What might surprise her, though, is that there appears to be no relationship between exam performance and the number of seminars attended. This would suggest to Dr Jones that there is something worth further investigating about her seminars.

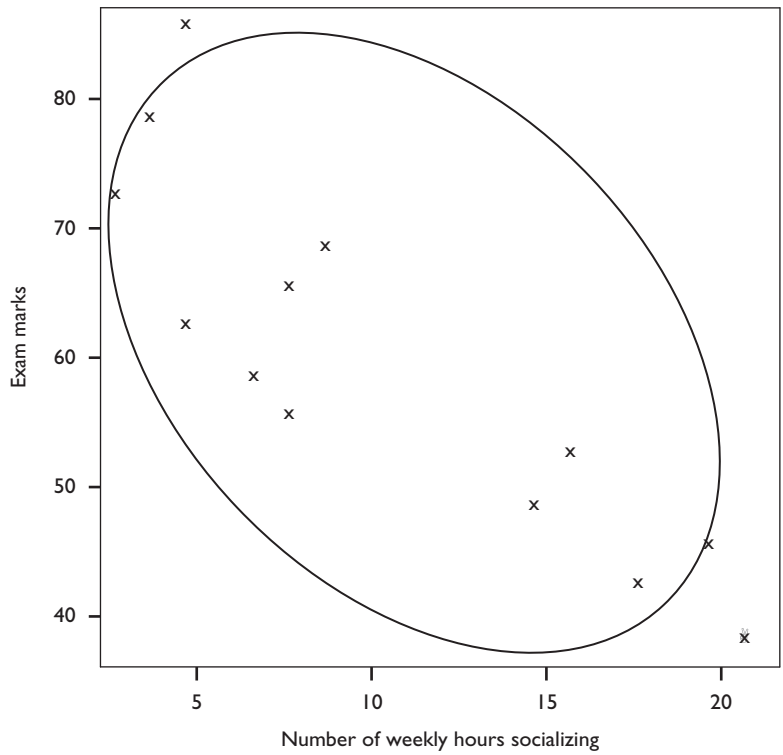
Activity

Using the scores for seminar attendance and coursework performance in Table 6.3, construct your own scattergram by hand. This entails drawing a grid

with horizontal lines to indicate the coursework marks between 30 and 90 and vertical lines to indicate the number of seminars attended from 1 to 13. Look at each student and put a cross on the grid where the two lines intersect for both scores.

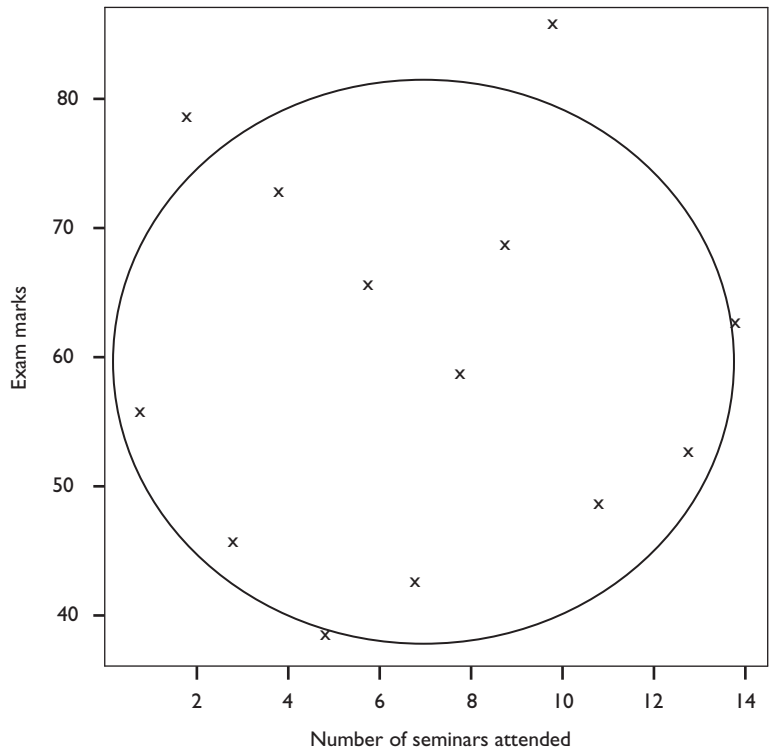
Looking at your scattergram overall, what might you conclude about the relationship between seminars attended and coursework performance? Is it similar to Dr Jones' findings about the relationship between seminars attended and exam performance?

I give my interpretation at the end of this chapter.



By drawing an overall shape to fit in as many of the plotted points as possible, a visual picture of a negative correlation is shown where the oblong tilts from bottom right to top left.

Figure 6.3 Scattergram showing a negative correlation between average number of weekly hours socializing and exam marks



By drawing an overall shape to fit in as many of the plotted points as possible, a visual picture of virtually no correlation is shown where there is no recognisable tilt, but almost a circle which shows no direction.

Figure 6.4 Scattergram showing no correlation between number of seminars attended and exam marks

The strength of a correlation can be calculated statistically, which gives you the correlation coefficient. The nearer the correlation coefficient is to + 1, the stronger the positive relationship, and the nearer the correlation coefficient is to –1, the stronger the negative relationship. Where the correlation coefficient is close to 0, there is very little or no relationship. Although it is possible to do this by hand, it is much easier to use one of the statistical packages such as SPSS (Statistical Package for the Social Sciences).

It is also important to be clear that correlations do not imply cause and effect: they can only infer a relationship but they can be very useful as an indicator of what elements might be useful to research in an experimental design. In Dr Jones' case, she might decide to alter the format of her seminars to see if that would improve the correlation with academic performance measures.

Summary

Correlation techniques can be useful when it is not practical or ethical to carry out an experimental or other type of research study. They can also be useful for establishing whether or not your assumptions about what is happening are borne out sufficiently to warrant further investigation.

Synopsis

- In this chapter I have described some of the more common research methods that you could use in carrying out your first action research study, through using the device of a fictional scenario in teaching and learning supplemented with a decision chart.
- Throughout the chapter, I have stressed the importance of clarity and forward planning and suggested that completing a research protocol would be helpful.
- In the section on survey research, I have described the difference between a questionnaire and an attitude or measurement scale and given guidance on the stages required for both.
- In the interview section, I have described the three basic types: structured, semi-structured and unstructured, and discussed which is appropriate for a given research aim together as well as providing some basic advice on interview procedure.
- The experimental design section is probably the weightiest in terms of the detail, as differences between the three types of independent groups, matched subjects and repeated measures need some careful thinking. By using the fictional scenario, I have described the main complexities involved in each.
- Observational research has been divided into three main types: direct, naturalistic and participant, with a brief consideration of their respective advantages and disadvantages. The process has been outlined together with a consideration of how to calculate inter-rater reliability to counteract observer bias.
- Finally, I have briefly discussed the correlation technique. Although it is not an actual research method but a statistical procedure, it can be a useful precursor to action research or a way of establishing some evidence about the learning and teaching issue you are interested in.
- The aim of this chapter has been to provide you not with a definitive textbook account of each method, nor with a complete list of all the research methods available, but with enough information to design a robust study that is publishable.

- Throughout, I have taken a pragmatic approach to pedagogical action research by suggesting methods that are not always seen as 'mainstream' action research. However if it is a process that enables you to reflect and act on your findings to change your practice, then it is pedagogical action research. If you prefer to keep an objective and distanced stance, that is perfectly acceptable and equally valuable, but would more likely be described as pedagogical research.

Answer to activity

If you draw a continuous line to include as many of the plotted points on your grid as you can, you will see a fairly flat oblong shape that does not tilt at the top to the right, which would suggest a positive correlation. A tilt at the top to the left would suggest a negative correlation, but it does not do this either. It is fairly safe to assume that there is virtually no correlation between the number of seminars attended and the coursework marks. We can conclude that, like exam performance, seminar attendance has little or no relationship with coursework performance. These two findings would suggest that Dr Jones would find it useful to look in some detail at what is actually going on in her seminars, and how she might improve them. Alternatively, she might prefer to investigate the effects of seminar attendance using inferential statistics – as suggested in Chapter 8.

Further reading and resources

Books

Many of the texts on research methods cover the same ground and are usually available in your own institutional libraries in the social sciences or educational research sections. The following is recommended as it is a comprehensive text that you can return to as your research experience grows and when you want to expand your repertoire of appropriate research methods.

Cohen, L., Manion, L. and Morrison, K. (2017) *Research methods in education*, 8th edn, London: Routledge.
This is a well-known and comprehensive book that serves well as a useful 'go-to' text. It ranges from early years to higher education and is presented in five parts covering: the context of educational research, research design, methodologies (this includes a chapter on action research), methods of data collection, and data analysis.

Websites

There are many relevant websites, but I have concentrated on two that I have personally found useful.

Research methods and methodology by Emerald Publishing
Available: www.emeraldgrouppublishing.com/research/guides/methods/index.htm (accessed 28 March 2018).

This includes a series of 19 'how to' guides that are very useful overviews and starting points, including action research as well as some of the areas I have presented in this chapter: interviews, focus groups, designing a survey, using questionnaires, mixed methods, experiments, choosing statistical techniques. Overall, although its focus is wider than that of higher education, I find it a good website for the most common research methods.

The Enhancing Teaching-Learning in Undergraduate Courses (ETL) project
Available: www.etl.tla.ed.ac.uk/ (accessed 28 March 2018).

Over the years I have drawn extensively on this website, which is the outcome of a UK-funded project that ran from 2001 to 2005. It is a rich source of research, concepts and theories relating how we might encourage high quality learning in the disciplines. Among the resources is the ASSIST questionnaire that I mentioned in this chapter as well as other tools. You will also find research publications that are subject-specific and one of the earliest publications related to the idea of threshold concepts that is currently influential in higher education. Overall it is a website that is still well worth browsing as it is focused on higher education research that relates directly to learning and teaching.

Chapter 7

How can you analyze qualitative data in pedagogical action research?

Introduction: the qualitative versus quantitative debate

In a survey of research methods used in the scholarship of teaching and learning, Divan et al. (2017) analyzed 223 empirical research publications in 3 SoTL-focused journals and found that 37% were qualitative, 30% were quantitative and 33% were mixed methods. When you carry out an action research study, there are several decisions to make, one of which is the research method. Deciding on a research method cannot be carried out in isolation from thinking about the kind of research information or data that it will produce and deciding how you will analyze those data. As with everything else, there are debates in the field of analysis: the most fundamental of which has been the quantitative versus qualitative dispute that is a consequence of two very different research paradigms. The scientific positivist paradigm assumes that behavior can be explained through objective measurement in which sources of bias and error can be minimized or eliminated. The data will be quantitative and subject to statistical testing. The interpretive paradigm has been a social sciences reaction to positivism. It is underpinned by a belief in a socially constructed and subjectively-based reality, influenced by culture and history. The data will be qualitative and the researcher describes it in rich detail.

Mixed methods

Just as there are proponents who believe that the two paradigms must be kept separate there are others who believe that a combination of both approaches is appropriate particularly for enquiry into complex educational contexts. This is often referred to as mixed methods research (e.g. Gorard with Taylor, 2004; Creswell and Plano Clark, 2017; Johnson, Onwuegbuzie and Turner, 2007; Gorard, 2010). There is a good case for integrating both the quantitative and the qualitative in educational research. It is an approach that fits well with the flexible nature of pedagogical action research. An example of how I have used both qualitative and quantitative analysis in the same study is given in a case study in Appendix G. This is a brief account of a study where we were interested in exploring different

departmental induction procedures related to information-seeking skills. We gave the students a library quiz and then asked the tutors to estimate how well they thought their students performed (Norton and Norton, 2000).

In the course of this chapter and the next I present both approaches separately for ease of access. I begin here by concentrating on qualitatively analyzing our data, and in Chapter 8 I describe some of the more commonly used quantitative analyses.

When is qualitative analysis appropriate?

Qualitative analysis can be a useful precursor to quantitative research as it helps to define the salient issues to investigate. In its own right, it is useful in research studies where:

- little is known about the research area, and the research question is being framed to enable the discovery of new information, such as a new way of conceptualizing independent learning;
- a richer understanding of the perspective of the person being researched is sought, as is the case with Dr Jones and her efforts to understand her students in interviews and focus groups;
- more in-depth information is needed (which may be difficult to quantify), such as the 'thicker' detail that can be obtained from open-ended questions to amplify questionnaire responses;
- there are already existing sources of data such as, Facebook posts, discussion forum material, diaries, blogs, students' assignments, video recordings and reports.

Unlike quantitative research, where the aim is to be as objective as possible and to minimize error and bias, in qualitative research the aim is to acknowledge fully the subjective part played by the researcher. This applies not only in collecting your data but also in how you analyze and interpret it. To aid this process, wherever possible, you should make notes in the data collection phase of:

- what you felt was going on;
- what your research ideas were;
- how they were being changed by what you were listening to and/or observing;
- what you are selecting to record and analyze;
- what you are missing out and why.

There are many types of qualitative analysis, including, for example:

- grounded theory: discovering the theory/hypothesis from the data;
- discourse analysis: analyzing underlying meanings in speech/text;

- interpretative phenomenological inquiry: understanding the individual's perspective and experience;
- ethnographical analysis: immersing yourself in the participants' environment to better understand their goals, motivations and challenges;
- phenomenographical analysis: exploring variation in participants' experience of a phenomenon;
- narrative approach: weaving together a sequence of events from the data to construct a coherent story.

It would be impossible to describe all these different types in sufficient detail here, so I have provided further sources of information about them at the end of this chapter. Instead of trying to touch on several methods, I am going to concentrate on two commonly used and closely linked analyses that I have found useful in my own action research:

- thematic analysis: searching for patterns;
- content analysis: which I describe as a combination of qualitative and quantitative analysis.

Carrying out a thematic analysis

I am assuming that you will have a large amount of text to analyze, usually from a transcript of an audio-recorded interview or focus group. What follows is my personal approach to thematic analysis. It is pragmatic and basic but it is not the only way to do it. There are many different approaches to thematic analysis and which you choose depends very much on your own research purpose, the time you have available and your own capabilities. Generally speaking, the process involves a series of stages in which you reduce the amount of content by putting it in categories, sometimes called coding, in order to discern some important themes in what your participants have said.

In order to illustrate the various stages that I have used, I am going to use an excerpt from an interview study on ten new lecturers' views about learning, teaching and assessment (Norton and Aiyegbayo, 2005). In Figure 7.1, I show their responses to the first question which asked: 'What do you think university teaching is all about?'

Stage 1: Immersion

This stage is where you read your first transcript and note down any general themes that you notice. Normally, you would do this with the whole of the interview and not just the responses to each answer, as shown in Figure 7.1. I am asking you to assume that these answers are the whole interview transcript in order to give you a flavour of the process without producing reams of transcripts. One of the initial mistakes I made when I first used thematic analysis was

Interviewer:

'What do you think university teaching is all about?'

It depends on the university really. I guess it is about nurturing the students. Getting out their best potential. Working on them. Finding out where they come from and what they know and to treat them as individuals. (Lecturer A)

There are three ways I look at it. I think it is about inspiring people especially in an institution like this where the students do not come from a HE background attainment. You have to inspire people to learn, to read, to question, to rebel, to fit. I like to think it is about inculcating them in professional values I learnt as a journalist (that was my previous job). It is a constant evolutionary process of learning for me. It is about learning information and communicating it to the students. (Lecturer B)

I think it is about teaching people the skills to carry on learning after university. To develop skills to problem solve and analyse things. I teach a special needs course which is essentially disability studies which is rooted in education. (Lecturer C)

I think it is about extending people's interests in what they are interested to a higher level. My view is to get people ready for employment. To give them graduate level skills and I think university performs that. (Lecturer D)

I think it is about providing the opportunities for people to develop. Also to provide the opportunities for employment. What I do is to prepare people to be teachers. At the same time, prepare people to be reflective. And to live more fulfilled lives. (Lecturer E)

I think primarily it is facilitate students acquiring intellectual skills as appropriate for them to leave here and find employment. It is also to help people engage with the evolving body of knowledge. In a discipline that I am doing (Philosophy) a lot of the arguments are engaging with people's attitudes towards reality. It deals with the students' relationship with the discipline as well. (Lecturer F)

I think it should be about helping students to think critically and learn transferable skills that they can use in whatever employment they find themselves. (Lecturer G)

I suppose it is about facilitating students' learning in the path towards their future careers. I supposed there has been a change from when I was in university. It is not about delivering truths or information; it is about enabling students to be lifelong learners. (Lecturer H)

Our job is to engage the students so they go away with the feeling they have learnt something. The way we teach them should have an effect on the way they learn. (Lecturer I)

It is about students finding more about the subject area and also finding more about themselves. To become much more self aware and also becoming much more confident and developing their own knowledge base but not only in the subject but wider than that. (Lecturer J)

This research was part of a HEFCE funded consortium psychology project called Assessment Plus, details of which can be accessed from the Write Now CETL website: www.writenow.ac.uk.

Figure 7.1 Interview excerpt from Norton and Aiyegbayo (2005). Composite transcript from ten participants' responses

to look for themes related to the questions asked. This is quite common and it was not until I read the Braun and Clarke (2006) description of thematic analysis that I realized how such an approach is likely to produce a descriptive synthesis rather than an analysis. In other words, by focusing on the interview questions, the so-called themes are little more than extricated quotes under each

question heading. This may well have accounted for why some of my earliest qualitative research reports were not accepted for publication!

To avoid this mistake you need to read all your transcripts repeatedly until you almost knew them by heart. The immersion stage is aptly named, as this is the time when you need to lock yourself away from any distractions and really 'dive in' to your data.

In my first of several readings, I note some general themes:

- Academic
- Employment
- Transformative
- Lecturer's own teacher development

Stage 2: Generating categories

This next stage involves a much closer reading of each transcript, one by one, looking to generate as many categories as possible. You then write down a label that best describes each category before moving onto the next transcript, where you repeat the process but also look for new categories. This helps you to guard against missing anything. Following is my list of categories. If you are surprised by or disagree with me on any of them, this is a good illustration of why and how qualitative analysis tends to be more subjective. In action research, your analysis is inevitably affected by your values and belief system as a researcher practitioner, but also by your understanding of the research literature.

Lecturer A

- The institutional context
- Developing students academically

Lecturer B

- Inspiring students academically
- Professional values/vocational preparation/employment
- Lecturer's own teacher development

Lecturer C

- Lifelong learning skills
- Reflection on subject

Lecturer D

- Developing interests academically
- Preparing students for employment

Lecturer E

- Transformative effects of higher education

Lecturer F

- Engaging with knowledge
- Engaging with the discipline

Lecturers G, H, I and J

- No new categories

This stage of the process gives me 12 categories, which would be a manageable number. Generally speaking, between 10 and 15 is considered to be acceptable, but if I were looking at 10 full interview transcripts I would have many more than that – possibly running into the hundreds. So normally the next stage would be to reduce this number.

Stage 3: Deleting categories

In this stage, I am looking to get rid of any categories that only have one or two examples in them or any that overlap considerably with other categories. I hesitate to suggest that you should always be as sweeping as this, for it may be that even if only one person has said something that can be described as a category, it might be important to keep it in. It could be, for example, something that one respondent mentioned over and over again, signaling for that person at least, it is an important part of her/his lived experience. This is part of the subjective decision-making involved in thematic analysis. Like all decision-making processes in research, it will need justifying.

In my example, I would not want to delete the category of 'engaging with knowledge', because, although it was only mentioned once by lecturer F, I know that there is much in the pedagogical research literature about epistemological beliefs and teaching and learning (Hofer and Pintrich, 1997, 2004; Päuler-Kuppinger and Jucks, 2017; Richardson, 2013), so this is a category I would want to retain. Here, I am using a deductive approach, which means my coding is influenced by my pre-existing theoretical understandings and concepts. If I was not versed in the literature, I might use an inductive approach in which my coding would be derived purely from what the interviewees have said.

As a result of this stage I am now left with eleven categories:

1. developing students academically;
2. inspiring students academically;
3. professional values/vocational preparation/employment;

4. lecturer's own teacher development;
5. lifelong learning skills;
6. reflection on subject;
7. developing interests academically;
8. preparing students for employment;
9. transformative effects of higher education;
10. engaging with knowledge;
11. engaging with the discipline.

This is an ideal number of categories but, as mentioned earlier, if I was looking at the entire set of 10 transcripts there would be many more, so the next stage would be to reduce this number.

Stage 4: Merging categories

This is where you look again at your categories and try to collapse as many of them as possible, re-labelling them as themes. A useful strategy is to go back to the original tentative themes you garnered from your first readings and see if you can refine and describe them more accurately. To illustrate this process I have reduced my 11 categories to five themes:

1. developing students' academic abilities (developing students academically, inspiring students academically);
2. engaging with the subject (developing interests academically, reflection on subject, engaging with the discipline);
3. employment (professional values/vocational preparation, preparing students for employment, lifelong learning skills);
4. transformative effects of higher education (engaging with knowledge);
5. lecturer's own teacher development (teacher as learner).

Stage 5: Checking themes

You now need to re-read your transcripts alongside your list of themes and revise them if necessary. One way of checking the accuracy of your theme labels is to ask a willing colleague to allocate quotes from the transcripts to fit your generated themes. On their website, Braun and Clarke take a different stance when they argue that while it can be helpful to code data by using more than one researcher, it does not make it any 'better'. Their argument is that coding is 'an active and reflexive process that inevitably and inescapably bears the mark of the researcher(s)'. This resonates strongly with those who hold the view that qualitative data are interpreted subjectively. I accept this point of view but in my own research I have found collaborating with others helps me to sharpen up my thinking and to be more precise in my terminology.

Stage 6: Linking themes

This is possibly the most difficult stage. As Braun and Clarke (2006) caution, one of the major pitfalls in thematic analysis is:

> . . .a failure to actually analyze the data at all! Thematic analysis is not just a collection of extracts strung together with little or no analytic narrative. Nor is it a selection of extracts with analytic comment that simply or primarily paraphrases their content.
>
> (Braun and Clarke 2006, p.94)

This is why they advise researchers not to analyze the data by using questions as themes, as discussed earlier. In this stage then, you need to make notes of any relationships or links you see between your themes. Keep in mind your research aim and look for patterns that make sense in order to present a coherent and convincing account of what the data tells you.

In my example, I am going to illustrate this by focusing on the employment theme, as it was a finding that surprised me. In my analysis so far, it looked as if employment was linked with professional values, vocational preparation and possibly lifelong learning skills. Lifelong learning might also link with my transformative theme. The pattern that appeared to be emerging from looking at these themes was that these new lecturers most decidedly did not have a 'traditional' view of doing a degree for the love of learning or a passion for the subject. They were much more pragmatic and tuned into higher education in the 21st century with its demands from government and consumerism. Of course this is only a brief excerpt and if I was doing it 'for real', it would be much more richly described and articulated.

Stage 7: Presenting your findings

Take the most important theme, select examples of your transcript data and begin to construct an overall commentary on how the data examples are linked together – you can use illustrative quotes to do this. The quotes need to be vivid examples of the argument or case you are making within the overall narrative. The aim is to present an analytical narrative that makes some sort of reasoned case in response to your original research question. It is also important to present as authentic an account of your participants' voices as possible. Figure 7.2 presents the beginning of what an analysis might look like.

Other researchers like to use mind-maps to make links to help them with their interpretation. This is where your judgment and insight come into play most fully. It is where you make inferences, synthesize your findings and use illustrative quotes to support your conclusions.

Researcher notes:

What struck me most forcibly in this study was that the new lecturers I interviewed thought that teaching in university was much more than just teaching the academic subject, important though that was. I had not expected this, but in view of the changes in the university landscape, I am not sure why I was surprised. The lecturers talked to me about the need to prepare students for life beyond the university and employability was a common theme mentioned by seven out of the ten. Lecturer D talked specifically about graduate skills and clearly saw the role of university to prepare students for employment:

> … to get people ready for employment. To give them graduate level skills and I think university performs that.
>
> (Lecturer D)

Although most of the lecturers who mentioned this, seemed happy with this current situation, there is a suggestion in the transcripts, that Lecturer H does not feel quite the same way as she commented that things have changed and there is an almost resigned acceptance in the way she used the phrase 'I suppose':

> I suppose it is about facilitating students' learning in the path towards their future careers I supposed [SIC] there has been a change from when I was in university. It is not about delivering truths or information; it is about enabling students to be lifelong learners.
>
> (Lecturer H)

As well as talking about employment, this lecturer also divulged her own teaching orientation which would appear to be about knowledge transmission, when she talked about *'delivering truths or information'*. This is an important point, which I will return to later when discussing the theme of lecturers' own development as teachers.

Figure 7.2 An example of the beginning of a hypothetical analysis

Points to ponder

1. How convincing do you find my analysis presented in Figure 7.2?
2. Do you feel that I have essentially captured the meanings of the lecturers' views or that the process has lost the nuances?

One of the disadvantages of presenting a step-by-step process in this way is that it looks as if it is a straightforward linear model that glosses over the messy reality of trying to tease out a coherent account. Often the stages will overlap and you will find yourself going backwards and forwards from the data to your interpretation and back again. This is normal and indicates how doing it thoroughly is both time-consuming and demanding intellectually.

The process I have described has many variations, but essentially the principles of reiteration and careful coding apply. I have presented my thematic analysis in terms of what Braun and Clarke (2006) call the semantic level. By this, they mean that the themes refer to the surface meaning of what has been said. Another level is that of latent themes that result from looking beyond what the participant has actually said, to infer some of their underlying ideas and assumptions. Whichever level you choose, it is important to remember the part you play in making a subjective researcher interpretation. This is why in any account it is important to specify the stages you took in arriving at your analysis and interpretation.

Summary

Thematic analysis is a good qualitative method to begin with, as it gives you the basic skills that will help you if you want to go on to try other qualitative methods. It is also particularly useful in a learning and teaching environment as it is not tied to a specific epistemological or theoretical perspective, so can be applied equally well to many quite different pedagogical contexts (Maguire and Delahunt, 2017).

Carrying out a content analysis

In my own research I have used this method of analysis. I have found it combines both the search for rich meanings and a deeper understanding of the topic I am researching, together with the opportunity to carry out some very basic quantitative procedures. It is this bridging of the quantitative and the qualitative that appeals to me as a psychologist. Content analysis can be used on interview transcripts as well as other documents such as diaries, blogs and discussion posts. Stemler (2001) defines it as 'a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding' (p.1). Like thematic analysis, the aim 'is to systematically transform a large amount of text into a highly organized and concise summary of key results' (Erlingsson and Brysiewicz, 2017, p.94).

In pedagogical action research, content analysis would be particularly useful if you wanted, for example, to carry out some systematic analysis on the content of students' written assignments. There are many existing frameworks that you could use as a starting point, such as marking grids if they are used in your institution. Alternatively, you could use frameworks from the literature. Findlay, Dempsey and Warren-Forward (2010) did this in analyzing their radiotherapy students' journals while they were on work placement. The advantage of using an existing framework is that much of the decision making about coding and categories is already taken care of. This is known as an a-priori approach where the researcher decides on the categories prior to the analysis – usually based on a theory or sometimes a practitioner-derived framework.

When you do not wish to use an existing framework, you have to construct your own categories. To illustrate this process I will use the same excerpt shown in Figure 7.1. As with my description of the thematic analysis process, this is a

personal approach and not the only way to carry out a content analysis. My research aim remains the same: I want to explore new lecturers' views of the purpose of higher education.

Stage 1: Deciding on the unit of analysis

Because this analysis is partly quantitative, the first decision you have to make is what units of analysis will you use? This can be at the level of words, phrases, sentences or paragraphs. Which you choose will depend on your research question. For example, if I wanted to find out how many times the lecturers had referred to employability, I could simply look for the word 'employment' which is mentioned four times, but of course I would miss phrases which mean the same, or alternatives such as 'future careers'. More crucially, I miss the nuances such as preparing students for employment or helping them acquire graduate skills or giving them opportunities for employment. These would be better captured in a longer unit of analysis, such as a sentence:

> I think primarily it is facilitate students acquiring intellectual skills as appropriate for them to leave here and find employment.
>
> (Lecturer G)

My own preference has been to go for what I call information units, which I first described in my PhD research when I content-analyzed examination scripts (Norton and Hartley, 1986). By this term I mean an element of the writing that conveys a single discrete concept, thought or idea, which might be expressed in a single word, a phrase, sentence or even a paragraph or two.

Stage 2: Dividing transcript into units of analysis

Taking my information units as the unit of analysis, I now need to divide the transcript as shown in Figure 7.3 (overleaf). This shows the first five transcripts broken down into a total of 24 information units.

When you look at this figure, you might well disagree with how I have divided up the text, but that is to be expected, as it is a subjective decision-making process. I have found that with practice I get more consistent. Internal consistency is probably more important than some outward measure of agreement with another researcher.

Activity

Have a look at the Lecturer F transcript overleaf and divide it into information units. At the end of the chapter I show my version, so you can compare the two. It would be surprising if they were exactly the same.

Lecturer A:

'It depends on the university really. ‖ I guess it is about nurturing the students. ‖ Getting out their best potential. Working on them. ‖ Finding out where they come from and what they know ‖ and to treat them as individuals'.‖

Lecturer B:

'There are 3 ways I look at it. ‖ I think it is about inspiring people ‖ especially in an institution like this where the students do not come from a HE background attainment. ‖ You have to inspire people to learn, to read, to question, to rebel, to fit. ‖ I like to think it is about inculcating them in professional values I learnt as a journalist (that was my previous job). ‖ It is a constant evolutionary process of learning for me. ‖ It is about learning information and communicating it to the students'. ‖

Lecturer C:

'I think it is about teaching people the skills to carry on learning after university. ‖ To develop skills to problem solve ‖ and analyse things. ‖ I teach a special needs course which is essentially disability studies which is rooted in education'. ‖

Lecturer D:

'I think it is about extending people's interests in what they are interested to a higher level. ‖ My view is to get people ready for employment. ‖ To give them graduate level skills and I think university performs that.' ‖

Lecturer E:

'I think it is about providing the opportunities for people to develop. ‖ Also to provide the opportunities for employment. ‖ What I do is to prepare people to be teachers. ‖ At the same time, prepare people to be reflective. ‖ And to live more fulfilled lives.' ‖

Figure 7.3 Five transcripts divided into information units

Lecturer F:

> I think primarily it is to facilitate students acquiring intellectual skills as appropriate for them to leave here and find employment. It is also to help people engage with the evolving body of knowledge. In a discipline that I am doing (Philosophy) a lot of the arguments are engaging with people's attitudes towards reality. It deals with the students' relationship with the discipline as well.

Stage 3: Construct categories

This stage is exactly the same as stages 1–5 in a thematic analysis, as described earlier. Using the excerpt presented in Figure 7.3, this gives me five categories:

1. Developing students' academic abilities;
2. Engaging with the subject;
3. Employment;
4. Transformative effects of higher education;
5. Lecturer's own teacher development.

Stage 4: Assign information units to categories (coding)

This is the stage where you have to ensure that all your information units are assigned to one of your generated categories. It is a fundamental requirement of content analysis that no unit of analysis can appear in more than one category, nor can any unit remain unassigned to a category. So using my five categories, I am able to assign 21 of the 24 information units in Figure 7.3 as follows:

1. Developing students' academic abilities:
    - 'I guess it is about nurturing the students.'
    - 'Getting out their best potential. Working on them.'
    - 'Finding out where they come from and what they know and to treat them as individuals especially in an institution like this where the students do not come from a HE background attainment.'
    - 'I think it is about providing the opportunities for people to develop.'
2. Engaging with the subject:
    - 'I think it is about inspiring people.'
    - 'I think it is about extending people's interests in what they are interested to a higher level.'
3. Employment:
    - 'I like to think it is about inculcating them in professional values I learnt as a journalist (that was my previous job).'
    - 'My view is to get people ready for employment.'
    - 'To give them graduate level skills and I think university performs that.'
    - 'Also to provide the opportunities for employment.'
    - 'What I do is to prepare people to be teachers.'
4. Transformative effects of higher education:
    - 'You have to inspire people to learn, to read, to question, to rebel, to fit.'

- 'I think it is about teaching people the skills to carry on learning after university.'
- 'To develop skills to problem solve and analyze things.'
- 'At the same time, prepare people to be reflective and to live more fulfilled lives.'

5. Lecturer's own teacher development:

- 'It is a constant evolutionary process of learning for me.'
- 'It is about learning information and communicating it to the students.'

However, having gone through this process of assigning units, I find that I still have three information units to allocate, which do not readily fit into any of my existing categories:

- 'It depends on the university really.'
- 'There are three ways I look at it.'
- 'I teach a special needs course which is essentially disability studies which is rooted in education.'

The first two seem similar and could form another category, perhaps called 'introductory qualifier', which is a bit vague and not particularly informative. The third information unit is more to do with the lecturer's own subject influencing her views of education. Reflecting on this, I see some commonality with all three units. Essentially, the lecturers are describing their personal framework for answering the question, so I now have a sixth category which I have called 'Lecturer's personal framework'.

Being unable to code or fit all your units of information into a category is a common occurrence in content analysis and might mean you need to construct a new category, as I have done. The danger in doing this is that your new categories begin to mushroom. If you find this happening, you have to go back to the stages of deleting and merging until you are left with a manageable number of about 10–15 categories. Because quantitative content analysis involves counting units, it is possible to use some measure of inter-rater reliability, as described in Chapter 6, to check whether or not your categories are sufficiently descriptive to allow reasonably consistent allocation.

Stage 5: Calculate the percentage of information units that fall into each category

This is where the quantitative aspect can be applied. Your research question will determine how you do this. In my example, I want to see what proportion of all the lecturers' answers relate to these six categories, which will give me a simple percentage figure as shown in Table 7.1.

Table 7.1 Percentage of total information units (N = 24) in each category, content analyzed from responses to the question 'What do you think university teaching is all about?'

Category	*N*	*Percentage (%)*
Developing students' academic abilities	5	21
Engaging with the subject	2	8
Employment	5	21
Transformative effects of higher education	6	25
Lecturer's own teacher development	2	8
Lecturer's personal framework	4	17
Total	24	100

Interestingly, what this tells me is that while I had initially thought from the thematic analysis of all 10 lecturers' transcripts that they were actually focused on employment, this quantitative analysis from admittedly only five of the lecturers tells me something different. The highest percentage of their comments (25 per cent) related to the transformative effects of higher education. Personally, I find this a much more cheering view.

This is the most basic form of quantitative analysis, but I might be interested in looking at the percentage of information units in each category for each lecturer, or I might want to compare them on the basis of the subjects they teach. I could do this by perhaps dividing them into an arts/sciences split, or by the number of modules they had completed on their university teaching programme.

To illustrate how this latter suggestion would work, I am going to make up some spurious facts about the five lecturers whose transcripts I have analyzed. Let us imagine that Lecturers A, B and C have completed their programme on university teaching. I will call them the 'completers'. Lecturers D and E are only just beginning the programme and I will call them the 'beginners'. Let us imagine that I am specifically interested in whether the programme itself has had any effects on their views about the nature of higher education. See Table 7.2 for a comparison of percentages in each category divided into 'completers' and 'beginners'.

Immediately, you can see by looking at the percentages that there appear to be some noticeable differences here. Lecturers A, B and C who have completed the programme seem to be more diverse in their answers about the nature of higher education teaching; they are concerned with their own professional development and they see employment as one of the less important elements. Lecturers D and E, who have only just begun the programme, talk more about employment, with 50 per cent of their responses falling into this category. As far as the transformative effect of higher education is concerned, there seems to be

Table 7.2 Comparison of percentages in each category divided into 'programme completers' (15 units) and 'programme beginners' (8 units)

	Completers (Lecturers A, B and C)		*Beginners (Lecturers D and E)*	
Category	*N*	*Percentage*	*N*	*Percentage*
Developing students' academic abilities	4	25	1	13
Engaging with the subject	1	6	1	13
Employment	1	6	4	50
Transformative effects of higher education	4	25	2	25
Lecturer's own teacher development	2	13	0	-
Lecturer's personal framework	4	25	0	-
Total	16	100	8	101*

* The total percentages add up to more than 100 because of rounding up.

little difference between lecturers who are at the end or at the beginning of the programme.

This, of course, is a very simple example based on tiny numbers, so no statistical comparison is possible, but there are statistical tests that could be applied to a larger data set, and this will be the focus of Chapter 8.

One final word about the content analysis process I have described. Erlingsson and Brysiewicz (2017) caution us about being too rigid in following a set of steps. They suggest we need to be flexible and we should use and trust our own intuition. They also advise discussing our analysis with other researchers if possible.

Digital tools for qualitative analysis

I have described a non-technical approach to content analysis. It is also possible to use digital tools to analyze text and/or visual material, many of which are free to download from the internet. For example, Voyant Tools is a web-based application which allows you to paste text into a text box: https://voyant-tools.org/. This is the most basic process offered but just this simple step will produce a summary (including the most frequent words), a graph and a word cloud. Such tools are impressive in their speed and the detailed analyses they can produce, but in my view they separate you from intimately interacting with the material, so I prefer the more laborious process of doing it 'by hand'. If you want to explore the huge array of tools that are now available you might want to seek advice. I have found ResearchGate's Question and Answer forum a useful place to start; see for

example: www.researchgate.net/post/ Can_somebody_suggest_me_a_FREE_online_tool_for_doing_quantitative_content_analysis.

It is also a good idea to seek personal recommendation from a colleague who has used some of these tools and can give you a good idea about what they can do, as well as some of their pros and cons. They may even be persuaded to give you a tutorial.

Summary

Content analysis is a systematic process for organizing and analyzing textual material in order to draw meaning from it. Because it combines the quantitative with the qualitative, you are able to make different claims and draw different conclusions from those that would be possible with a purely qualitative analysis.

Points to ponder

1. Looking at Table 7.2, do you think that the content analysis was more helpful than the thematic analysis in understanding these new lecturers' views?
2. If you are considering an action research study designed to produce text as data, which of these two approaches would you be more tempted to use, and why?

Overall summary

As you can see, there are many commonalities between thematic and content analysis. The main difference is that thematic analysis is purely qualitative and gives you a rich understanding of the topic you are researching from the participant's point of view; whereas content analysis takes a more formulaic approach to the data and uses both qualitative and quantitative measures.

Whichever type of analysis you choose, you have to be scrupulously careful about generating your themes or categories to maintain rigour while retaining the flexibility that they both offer. In terms of pedagogical action research, either approach is particularly effective for gaining an in-depth understanding of the student and/or staff experience. For details of further information on the other types of qualitative analysis that I have mentioned, please see the suggestions at the end of this chapter.

Synopsis

- In this chapter I have described two quite closely related methods: thematic analysis which is qualitative, and content analysis which bridges the intersection between qualitative and quantitative.

- For both methods I take you through each stage, using an example from my own research to illustrate the process as I have done it.
- Throughout the chapter, I have aimed to give you enough knowledge to enable you to present your pedagogical action research findings in report that would be of publishable quality.

Activity: my version

Lecturer F:

I think primarily it is to facilitate students//acquiring intellectual skills//as appropriate for them to leave here and find employment//. It is also to help people//engage with the evolving body of knowledge//. In a discipline that I am doing (Philosophy)//a lot of the arguments are engaging with people's attitudes towards reality//. It deals with the students' relationship with the discipline as well.//

Further reading and resources

Reference

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Books

General

Cousin, G. (2009) *Researching Learning in Higher Education. An introduction to contemporary methods and approaches*, Abingdon: Routledge.

This book includes chapters on qualitative data analysis, narrative inquiry, ethnographic approaches, phenomenographic approaches and evaluation research, all in a higher education context.

Qualitative analysis

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Grounded theory

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Interpretative phenomenological analysis

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Creswell, J.W. and Plano Clark, V.L. (2017) *Designing and Conducting Mixed Methods Research,* 3rd edn, London: Sage Publications Ltd.
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Internet resources

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Grounded theory

The Grounded Theory Institute. 'The official site of Dr Barney Glaser and classic grounded theory.' Available at: www.groundedtheory.com (accessed 5 April 2018).

Chapter 8

How can you analyze quantitative data in pedagogical action research?

Introduction

Quantitative analysis is not a mainstream method in action research, as discussed in Chapter 5, but it has an important role to play in establishing a need for change (Ivankova, 2014; Greenwood, 2015). I have used quantitative data approaches many times as a stimulus both for reflection and for pedagogical action. For those of you who would like to undertake research that produces quantifiable results, I have described some basic statistical analyses.

When is quantitative analysis appropriate?

Quantitative analysis is useful in pedagogical action research studies where the method is:

- an experiment;
- an attitude scale or questionnaire;
- an observation study which involves counting;
- or produces any information that is quantifiable (age ranges, number of years teaching etc.).

Regardless of the research method that you choose, there are two types of quantitative analysis: statistics for description and statistics for drawing conclusions (known as inferential statistics). Sometimes you will want to include both in your action research study.

Descriptive statistics

These are used when you want to present succinctly what your data show. In the content analysis example described in Chapter 7, for example, it is difficult to get a feel for the importance of the different categories just by looking at the transcripts. In this particular case, examining the codings would actually have given us a pretty good idea, but this is because we were only dealing with 23

information units; but imagine 2,300 or even 23,000 units and it soon becomes clear that we need some way of summarizing a large body of information.

Descriptive statistics include measures of central tendency or averages (mean, median and mode), measures of dispersion or variability (range, mean deviation and standard deviation) and frequency counts. In this chapter I show how these can be calculated 'by hand' but it is also possible to use an electronic spreadsheet programme such as Microsoft Excel or Google Sheet, if you prefer. I have given details of beginner guides to these at the end of this chapter.

I will return to the Dr Jones vignette (in Chapter 6) to explore each of these measures in a little more detail.

Measures of central tendency

The mean (average)

This is the most commonly used measure and one that we use in our everyday lives. Dr Jones asked her students 'How many hours a week did you spend on reading up in the preparation week for your video task?' Remembering that there are 80 students in her class, an average would clearly be a useful way of summarizing these data. To avoid presenting large quantities of fictional data, I have made up numbers for Table 8.1, representing 20 students, to illustrate these statistics.

Before you do anything else, it is always a good idea to have a really hard look at your data (sometimes known as 'eyeballing' the data), as this will enable you to make sense of any statistical techniques you carry out.

As you can see by looking at Table 8.1, the commonest number of hours reading for the video task appears to be 1 with the other students doing slightly more, all in the range of 2–6 hours. The student who stands out, however, is student Q who claims to have spent 12 hours of reading in the preparation week. We will keep student Q in mind as we proceed.

The mean is calculated by adding up the total number of hours' reading each student has claimed (55), divided by the total number of students (20), which gives us an average of 2.75 hours that the students spent in preparatory reading. This would seem fairly reasonable, given this is only one module that these sports students study. However, Student Q's claim of 12 hours of reading has grossly inflated the total. This is called an outlier score and its effect is to distort the average. In this case, the mean is not a helpful measure for Dr Jones to consider, as it does not represent an accurate picture of what *all* her students are doing.

Conclusion

The mean is very useful for summarizing large numbers of scores in a single figure. It can be used safely when scores cluster closely together, but is misleading when they are spread out.

Table 8.1 Raw data on hours spent reading for Dr Jones' video task

Student	*Hours reading*
A	6
B	1
C	1
D	1
E	2
F	1
G	4
H	3
I	2
J	1
K	5
L	1
M	1
N	3
O	4
P	1
Q	12
R	2
S	3
T	1
Total:	55

The median

This is the midpoint of a range of scores and is obtained by arranging your scores in order of size (from small to large) and then finding out which number falls in the middle. This is the median.

In Dr Jones' study there is an even number of scores so she has to take the average of the two middle scores, which in this case are the same. The median is 2 (i.e. $\frac{2+2}{2}$).

1 1 1 1 1 1 1 1 1 **2 2** 2 3 3 3 4 4 5 6 12

Conclusion

The median is very simple to calculate if you have a small number of scores. Its other advantage is that the size of the outlier does not affect the measure. If, however, you have a very large number of scores, finding the median soon becomes a very tedious process (even Dr Jones' 80 students seems too much to contemplate).

The mode

This is the most frequently occurring score in a set of scores. In our example, you find it by counting the most frequently occurring score, which would be 1. Sometimes there are instances where two or more scores occur equally frequently, in which case you have a bi- or tri-modal measure.

Conclusion

The mode is another easy measure of central tendency involving a simple count of the score/s that occurs most frequently. It is not so useful when there is more than one group of frequently occurring scores, as it not a representative single figure.

Summary

Dr Jones now has three measures to represent her students' reading in the preparatory week:

- a mean of 2.75 hours;
- a median of 2 hours;
- a mode of 1 hour.

In this case she may prefer to use the median or the mode as being the most representative single measures of her students' reading time, but because Student Q's time is not represented, Dr Jones may wish to go on and look at measures of variability as well.

Measures of variability (dispersion)

In order to give herself a more accurate picture of her students' reading habits, Dr Jones needs to be able to indicate how widely spread their scores are.

The range

This is easily calculated by subtracting the smallest score from the largest (12–1) so the range of students' weekly reading hours is 11.

Conclusion

This is a very simple measure to calculate and has the benefit of taking Student Q's atypical score into account, but this also means you have a somewhat distorted picture. In its simplicity, you do not get a sense of how many students had small or large scores, because it does not take each and every score into account.

The mean deviation

This is a number that indicates how much, on average, the scores differ from the mean score. The larger the mean deviation, the greater is the spread of scores. It is calculated by taking the following steps (adapted from Clegg, 1983):

Step 1:
Compare each score with the mean score.

1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
1 – 2.75 = – 1.75
2 – 2.75 = – 0.75
2 – 2.75 = – 0.75
3 – 2.75 = 0.25
3 – 2.75 = 0.25
3 – 2.75 = 0.25
4 – 2.75 = 1.25
4 – 2.75 = 1.25
5 – 2.75 = 2.25
6 – 2.75 = 3.25
12 – 2.75 = 9.25

Step 2:
Add the differences found in step 3 (but ignore the signs).

1.75 × 9 = 15.75
0.75 × 3 = 2.25
0.25 × 3 = 0.75
1.25 × 2 = 2.50
2.25 × 1 = 2.25
3.25 × 1 = 3.25
9.25 × 1 = 9.25
Total = 36.0

Step 3:
Divide the total found in step 3 by the number of scores.

$$\frac{36.0}{20} = 1.8$$

The mean deviation is 1.8 hours' reading.

Conclusion

The mean deviation is a more stable measure of dispersion than the range, as it is calculated using all the scores, whereas the range is based on just two. However, it is a measure that is not much used, because it is a very simple figure and does not have any powerful mathematical properties, unlike the standard deviation.

If you want to read further about the mean deviation, Gorard (2015) has written an interesting paper making a reasoned case for why it should be used more.

The standard deviation

This is similar to the mean deviation but is calculated differently, by using the square root of the variance. This is quite a complicated formula, and there is no need to do it by hand as it is easily done using a scientific calculator or in Excel. The standard deviation is related to the normal distribution, which is where the mean, the median and the mode are all the same or very close in value and scores are spread evenly above and below the central value. If you get more scores below the central value it is called a positively skewed distribution (as is the case with the reading hours example) and if there are more scores above the central value, it is called a negatively skewed distribution.

A very large standard deviation, which would be one that was bigger than the mean, would indicate a great deal of variability in your scores. If this occurs, you may have to be cautious in any statistical tests you use. Parametric tests, which are more powerful, should only be used when the distributions are normal and the standard deviations are roughly similar, otherwise it is safer to use non-parametric tests. For example, if Dr Jones found in her experiment – comparing a group who took part in the electronic discussion forum (group A) with the group who took part in the extra reading (group B) – that the standard deviations in the exam results were much larger in group B than in group A, and did not show a normal distribution, she would be best advised to use non-parametric statistics. This distinction is described more fully later in this chapter.

Conclusion

The standard deviation is the most commonly accepted measure of dispersion as it has mathematical properties and is one of the indicators for choosing an appropriate statistical test.

Frequency counts

This is possibly the simplest method of descriptive statistics and it is useful for displaying your results in a summarized form. This might be in a bar chart or a pie chart, depending on your preference. Let us take an example from Dr Jones' questionnaire in which one item was:

> We are expected to learn the topics ourselves.

The responses using a Likert scale were:

Strongly agree (SA)
Agree (A)
Unsure (U)
Disagree (D)
Strongly disagree (SD).

To illustrate how this will work, I have again made up a table of responses to represent the answers of Dr Jones' class. See Table 8.2.

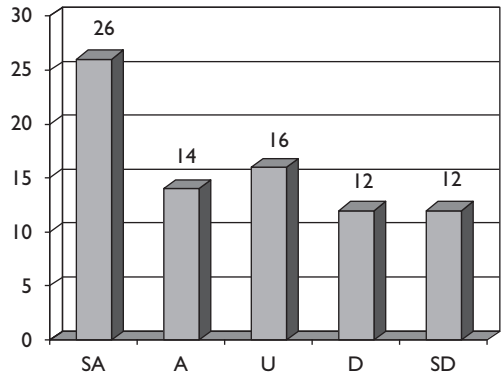
Just looking at such a large number of responses in this table makes it difficult to see what the majority response was, but we might get a sense that the 'strongly agree' response was most often mentioned. Calculating frequency scores for these data will give us a much clearer idea and can be displayed as a column chart as shown in Figure 8.1 or as a pie chart as shown in Figure 8.2.

Immediately we can see that actually the picture is a little more complicated than we might have thought at first, by just looking at the results in Table 8.2. Although the 'strongly agree' response occurs the most frequently, if we were to add the 'agree' categories (14) together with the 'strongly agree' categories (26) we would get a total of 40, which is 50 per cent of the total number of responses.

Effectively, this means that only half of Dr Jones' students actually agree that they are expected to learn the topic themselves. 30 per cent of her students disagree (12 strongly disagree + 12 disagree) and the other 20 per cent are unsure (16). This presents a somewhat different picture that Dr Jones may well wish to reflect on.

Table 8.2 Raw data in response to the questionnaire item: 'We are expected to learn the topic ourselves.'

Student	*Response*	*Student*	*Response*
1	SA	41	A
2	SA	42	U
3	SD	43	D
4	A	44	SA
5	U	45	SA
6	SA	46	U
7	D	47	SA
8	SA	48	SD
9	A	49	SA
10	A	50	SD
11	D	51	SA
12	U	52	A
13	A	53	U
14	U	54	SA
15	A	55	D
16	D	56	D
17	SA	57	U
18	D	58	SA
19	A	59	SA
20	SD	60	A
21	SA	61	D
22	SA	62	SD
23	SA	63	SA
24	SA	64	D
25	U	65	SA
26	SD	66	U
27	U	67	SD
28	SD	68	SA
29	SA	69	U
30	SD	70	D
31	U	71	SA
32	SA	72	U
33	D	73	SD
34	D	74	A
35	SA	75	A
36	SD	76	A
37	SD	77	U
38	A	78	U
39	U	79	SA
40	A	80	SA



Key:

SA Strongly agree

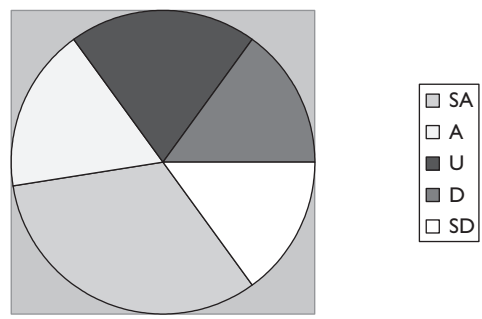
A Agree

U Unsure

D Disagree

SD Strongly disagree

Figure 8.1 Column chart showing frequency count in response to the questionnaire item: 'We are expected to learn the topics ourselves.'



Key:

SA Strongly agree

A Agree

U Unsure

D Disagree

SD Strongly disagree

Figure 8.2 Pie chart showing frequency count in response to the questionnaire item: 'We are expected to learn the topics ourselves.'

Activity

Let us suppose you have carried out a study with your students looking at the number of times they post to an online forum discussion you have set up to support them prepare for an assignment. You ask them to complete a simple questionnaire evaluating the effectiveness of the forum ranging from 5 (very effective) to 1 (not at all effective). You make a table of the results and also note their marks in the assignment:

Student	*Number of posts*	*Evaluation*	*Assignment mark*
Aaron	14	3	58
Brenda	3	1	62
Carol	18	4	55
Dilip	22	5	48
Erica	9	4	65
Fara	9	3	55
Galen	11	4	42
Harvey	17	5	58
Ilona	1	1	38
Jack	31	5	72
Konstanze	28	5	68
Lester	15	5	55
Minnie	8	2	48
Noah	12	3	52
Otalie	16	4	62
Peter	5	2	45
Quenby	21	5	65
Rachel	10	3	52
Sarah	16	2	52
Tim	4	1	45

Using the descriptive measures of central tendency, what conclusions might you draw from these findings? I give my answers at the end of the chapter.

Conclusion

Frequency scores are a useful way of summarizing data relatively easily and they are immediately accessible to an audience who might not be mathematically orientated.

Summary

Descriptive statistics offer a succinct way of presenting the results of your action research. They have the advantage of being relatively easy to calculate either by

hand, by calculator or by spreadsheet. However, there are studies when you want to go beyond describing your data in order to give a cause and effect explanation. This is where inferential statistics are needed.

Inferential statistics

This type of statistical analysis goes beyond the level of description and attempts to draw some conclusions from the data that you have collected. Specifically, this type of analysis would be used when you are testing hypotheses. An example would be looking to see if a teaching intervention improves student motivation. There are many inferential statistics, but I am going to concentrate on three main types: tests for correlations, tests for differences in means (from paired and independent scores), and tests for goodness of fit. However, before I do this, I need to briefly explain the concept of probability and significance testing and the broad differences between parametric and non-parametric tests. This is not intended to replace any of the excellent statistics textbooks, which are readily available, and some of which I mention at the end of this chapter. It is a basic outline of the most salient points you need to be aware of when designing and analyzing your own pedagogical action research studies.

Probability and testing for statistical significance

When researchers use statistical tests they are following a convention to establish the significance of their research findings. 'Significance' in statistical terminology has a precise meaning, which is to do with probability. Very simply it means to what extent we can be confident that the results we have obtained in our investigations have not occurred by complete chance.

In statistics, the level of significance is expressed in terms of a decimal fraction where:

- 0.05 means there is a 5 per cent probability (i.e. one in twenty) that your results arose by chance;
- 0.01 means there is a 1 per cent probability (i.e. one in a hundred) that your results arose by chance;
- 0.001 means there is a 0.1 per cent probability (i.e. one in a thousand) that your results arose by chance;
- 0.0001 means there is a 0.01 per cent probability (i.e. one in ten thousand) that your results arose by chance, and so on.

For the purposes of most social science and educational research, these four levels of probability are the most commonly accepted as indicating a significant finding. In cases where human life might be at stake such as in drug testing, the levels of probability accepted as statistically significant are much lower (0.00001, for example). When presenting tables of results, a lower case 'p' represents

probability together with the symbol '<' which means lower or smaller; the symbol '>' means higher or larger:

- $p<0.05$ means your results are statistically significant beyond the five per cent level of chance;
- $p>0.05$ means your results are not statistically significant at the five per cent level of chance.

Choosing a parametric or non-parametric test

There are differences of opinion among the statisticians as to whether or not this distinction is important, but when I learned my statistics in my psychology degree, I was taught that it did matter, and so it has stayed with me ever since. Basically, parametric tests are advised when a number of criteria apply, otherwise you are supposed to use non-parametric tests which are less powerful but do not need such stringent criteria. As a general rule of thumb, use parametric tests when:

- Data/scores have a true numerical value. By this I mean measures such as length (e.g. centimetres) or weight, (e.g. kilograms), where the differences between the values are the same (sometimes referred to as interval and ratio measurements). When measuring length we know that 8cms are exactly twice the length of 4cms; when measuring weight, we know that 6kgs are exactly three times the weight of 2kg. This enables us to apply mathematical formulae to the data in a way that we cannot do when the measures do not have a true numerical value.
- The spread of scores in your sample/s is clustered around the mean or measures of central tendency (sometimes this is known as homogeneity).
- Your sample size/s is/are large, and roughly equal (e.g. you were attempting to compare exam results from a group of 100 students with another group of 110 students).

Use non-parametric statistics when:

- Data do not have a true numerical value, such as that produced by Likert scales where SA = 5, A = 4, U = 3, D = 2 and SD = 1. (This is known as an ordinal measurement where the numbers do not have any mathematical properties.) Here we have no idea at all if the difference of one, between SA (5) and A (4) is exactly the same as the difference of one between D (2) and SD (1), nor could we possibly claim that the score of four for A somehow counts twice as much as the score of two for D. It has to be acknowledged, however, that many researchers do not bother with these finer distinctions and will quite readily use parametric statistics on data produced from Likert response questionnaires.
- The spread of your scores indicates a large variability.

- Your sample size/s is/are small, or unequal (e.g. you were attempting to compare exam results from one group of ten students with a second group of 100 students).

Basically, my advice is that if you are in any doubt about whether to use parametric or non-parametric tests in your research, it is better to err on the side of caution and use the non-parametric version.

Having briefly described the basic principles of statistical testing, I want to begin this section on inferential statistics by looking at correlation tests.

Correlation tests

We have already looked at correlational research briefly in Chapter 6 when I said it was more of a statistical test than a research method. This ambiguity also relates to whether it is considered as a descriptive or inferential statistic; in fact, it can be both. As I said earlier, even if you obtain a strong correlation, this does not mean that there is a causal relationship. Should you decide to carry out several correlational studies and found that the same strong relationship emerged, then you can use them as a satisfactory experimental investigation.

Correlations can also be used to make predictions about scores, a well-known one being the assumed relationship between A Level performance and degree performance, on which we base our admissions policy to higher education.

You will remember from Chapter 6 that Dr Jones was interested in the relationship between the number of lectures her students attended and their exam performance.

The scattergram (see Figure 6.2) indicated a fairly strong positive correlation, but we cannot tell from a scattergram alone, if this relationship is statistically significant or not.

Calculating correlations

Normally, if you have a large number of paired scores (or variables) to correlate I would advise you to use a statistical package, but it is possible to do it by hand and most basic statistics textbooks will show you how.

Spearman's rho and Pearson's product-moment correlation coefficient

There are two commonly used statistical tests for correlational analysis. Spearman's rho is a non-parametric test and works on ranking each of the two variables rather than their actual values. Pearson's product-moment correlation coefficient is the parametric equivalent and does use actual numerical values.

Aside from the criteria outlined above there is another reason why you might choose Spearman's rho. This is if your scattergram shows that there is not a straightforward linear relationship, but more of a curvilinear one.

Provided your sample shows a reasonably normal distribution, you have used interval or ratio data and your scattergram suggests a linear relationship, Pearson's product moment correlation coefficient would be the best test to use as it provides a more precise correlation coefficient and like all parametric tests it is more powerful (meaning it is more likely to detect a significant relationship).

To illustrate the difference I have ignored all the criteria and carried out both tests on Dr Jones' raw data shown in Table 6.3 (see Chapter 6). I have also looked up the statistical significance of these findings in significance tables (often called tables of critical values) in a textbook. Most statistics textbooks do this, but it is also possible to look up significance tables on the internet.

This gives me a Spearman's rho of 0.837, which is statistically significant ($p<0.01$), and a Pearson's correlation coefficient of 0.868, which although slightly bigger is still statistically significant at the same level of probability ($p<0.01$). You will remember that a correlation of 1.0 would be a perfect association between the two variables and a correlation of 0.0 would mean no relationship at all between the two variables, so the nearer the statistical value to 1.00 the more significant it will be.

Because this is such a very small sample (only 13 students) we need a high correlation coefficient to reach significance. If, for example, we had used the data from all of Dr Jones' 80 students, we would have reached the same level of significance with 0.283.

Conclusion

Correlation tests show the strength of the relationship between two factors (variables). When in doubt about which correlation test to choose, it is safer to use Spearman's test and the more paired variables you have the better.

Tests of difference for repeated measures (paired variables)

These are used when you are looking for significant differences between two sets of scores from the same people.

The sign test (S)

This is a very simple test, which can easily be calculated by hand, but which is sometimes forgotten about in these times of sophisticated computer analysis. I mention it here, because it can be very useful in observation studies,

questionnaire studies or any investigation where you obtain a limited number of paired variables. Let us take Dr Jones' data in Table 6.3 (in Chapter 6) and imagine she wants to find out if her students attend lectures more often than seminars. This is a repeated measures design as there are two scores from each student. The steps in calculating the sign test are again adapted from Clegg (1983).

Step 1:
Mentally subtract the value of seminar attendance away from the value of lecture attendance, giving each a + sign or a – sign, or 0 if there is no difference:

Student	*Lectures attended*	*Seminars attended*	*Sign*
1	15	10	+
2	12	2	+
3	15	4	+
4	14	9	+
5	8	6	+
6	6	14	–
7	5	8	–
8	4	1	+
9	4	13	–
10	3	11	–
11	5	3	+
12	6	7	–
13	2	5	–

Step 2:
Count the number of times the less frequent sign occurs, which gives you your S statistic = 6.

Step 3:
Count the number of pluses and minuses to give you an N (take away any 0 differences) = 13.

Step 4:
Consult a table of significance available in statistical textbooks. For an N of 13 and S of 6, this is not statistically significant, $p>0.05$. This is not surprising, given that the signs were almost equally divided. To have reached significance at the lowest level of probability for this small sample, S would have had to have been 3 or less. Another example of how this test works can be applied to my content analysis data shown in Table 7.2 (in Chapter 7), where in comparing the responses of lecturers who had completed the programme (completers) with lecturers who had not (beginners), I might hypothesize that I would obtain a greater number of information units from

the 'completers' as they have more experience and pedagogical language to articulate their views.

A quick look at this table shows that this does indeed seem to be the case, but how statistically significant is it? Doing the calculations, I have five plus signs, one minus sign (this is the S statistic) and one 'no difference' which gives me an N of 6, but for this to be statistically significant, I would need an S of 0. Basically, if you have a very small sample, as I did, you have to have all the differences in the same direction to be statistically significant.

Conclusion

The sign test is simple to calculate and can be useful when you want to carry out a statistical test on paired variables which may not necessarily be derived from an experimental design.

Wilcoxon matched pairs test

A more sophisticated and powerful test to use when testing for differences between paired variables is the Wilcoxon matched pairs test, sometimes known as the Wilcoxon matched pairs signed rank test. As its name suggests, it works by calculating the differences between each set of pairs, and then ranking them. Then it sums the ranks and compares the two. If the two sums of ranks is large, then the lower the probability level – meaning the more statistically significant it is. Because it works by ranking or ordering data, it is a non-parametric test.

Table 8.3 Comparison of exam performance before and after the online discussion forum intervention

Student	*Pre-intervention exam*	*Post-intervention exam*
Adam	55	58
Ben	45	48
Colin	62	65
Charlene	52	52
Grace	48	52
Tim	58	65
Pete	42	45
Jim	38	38
Joe	48	62
Jane	42	65
Mark	52	55
Sarah	58	85
Harry	42	45
Lenny	45	52
Ray	52	58

To illustrate this test, I will take the simplest of Dr Jones' repeated measure designs (discussed in Chapter 6) where she was interested in testing her hypothesis that the electronic discussion forum would help improve exam performance. The design is simple. Let us suppose that she takes a baseline measure of their exam performance, which becomes a pre-intervention exam score, she then encourages students to take part in the online discussion forum before their final exam, which becomes the post intervention exam score.

The data she might obtain are presented in Table 8.3. To keep things simple, I have made up data for just 15 students; I have also identified them by name, as I want to comment on individual students after I present the outcome of the Wilcoxon test.

Using a statistical package such as SPSS (Statistical Package for the Social Sciences) to compute this, gives us a Z score of –3.215, $p<0.001$. (The minus sign simply indicates that it is based on the negative rankings; had the positive rankings been greater, the Z score would have been +).

Looking at the raw data in Table 8.3 you can see clearly that all the post intervention exam marks were higher after the intervention with the exception of two students: Charlene and Jim, whose marks were the same (known as tied scores).

To present your results, I would suggest devising a simple table from the SPSS output, as shown in Table 8.4.

This is a very pleasing result, but what the Wilcoxon test does not do, is to take into account the size of the differences in the students' exam marks, (see for example Joe who has improved by 14 marks, Jane by 23 marks and Sarah by a massive leap of 27 marks. Most of the other students only make modest improvements, which they might have made anyway).

Student's t-test

Such fine detail is lost when you carry out a non-parametric test based on ranking scores. I now want to show you what happens if I use the parametric

Table 8. 4 Results of Wilcoxon test comparing exam performance before and after the online discussion forum intervention

Rankings	*N*	*Mean rank*
Post-intervention: Negative ranking[a]	0	0.000
Pre-intervention: Positive ranking[b]	13	7.00
Number of tied rankings	2	
Total	15	

a post-intervention ranking is smaller than pre-intervention ranking
b post-intervention ranking is bigger than pre-intervention ranking
Test statistic, Z = –3.215 (based on negative ranks), $p<0.001$

version, the rather confusingly named student's t-test (which is nothing to do with students but a pseudonym chosen by its creator, William Gosset), nowadays it is more commonly referred to simply as the t-test.

There are two versions: the t-test for related (repeated) measures and the t-test for independent groups. The t-test for related measures works by calculating the means and the distribution of scores around the means for both conditions (see Table 8.5).

Here we can see immediately that the mean exam performance after the intervention is bigger than it was before (56.3 as opposed to 49.3), but we can also see that the standard deviations for each condition differ – which means that there is a much bigger spread in exam marks after the intervention than there was before, which is why we should really choose the non-parametric test. However, using a t-test still gives us a statistically significant result of $p<0.01$, but one that is quite as significant as produced by the Wilcoxon test.

What neither test tells us is why some students did really well, whilst others improved only slightly and two not at all. This is the limitation of all inferential statistics and is one of the reasons why we need a combination of qualitative and quantitative analysis (see Appendix G). Imagine what an interesting study Dr Jones could do if she used these findings to carry out a second cycle of action research to interview the students about their perceptions of the online discussion task and whether or not they felt it had affected their exam performance.

Table 8.5 Results of t-test for related measures comparing exam performance before and after the online discussion forum

Condition	*N*	*Mean*	*SD*
Pre-intervention	15	49.3	7.0
Post-intervention	15	56.3	11.4

t = - 3.397, df = 14*, p<0.004 (conventionally reported as p<0.01)
*df stands for degrees of freedom and means the total number of scores in each condition which have to be known to fill in any missing scores, given you have the overall total. It is calculated as the total number of scores in each condition minus 1.

Conclusion

Testing for differences between paired variables can be done very simply with the sign test if you do not have too many scores to deal with. For larger numbers, it is preferable to use the non-parametric Wilcoxon test or its parametric equivalent, the student's t-test.

Tests of difference for independent groups

The second type of inferential test that I want to look at is concerned with analyzing differences between groups.

The Mann Whitney U test

This is the most commonly used non-parametric test of difference when you have independent groups and it can be applied to groups of uneven sizes. It works by ranking so can be used when your samples are very small and/or if the distribution of scores are not normally distributed. It can be calculated by hand but there are plenty of statistical packages that will do it for you. Its parametric equivalent is the t-test for independent groups, which works by dividing the difference between group means by the variability of groups. The formula for calculating it is quite complex, so I always use SPSS.

In Dr Jones' case, she could choose to test her hypothesis that the online discussion forum would help improve exam performance by comparing it with another condition rather than repeated measures as discussed above. The hypothesis will have to be formally stated:

> Students who prepare for seminars by taking part in an online discussion forum will perform better in the exam than students who prepare by extra individual reading.

I have made up some more scores to illustrate how both tests work (see Table 8.6).

I will again ignore assumptions about the data and use both the non-parametric Mann Whitney test and the parametric t-test on SPSS. The Mann Whitney U test resulted in a U value of 326, which is significant ($p<0.0001$). The t-test resulted in a t value of 4.968, which is significant ($p<0.0001$). As before, I suggest compiling a table where you can report what you need (see Tables 8.7 and 8.8).

Perhaps not surprisingly, the two tests come up with a level of significance that is the same. Looking at Table 8.8, we can see that the standard deviations are similar, the sample size is reasonably large, and so the parametric test would have been perfectly appropriate in this case.

Dr Jones' hypothesis that an online discussion forum will be more effective in improving exam performance than extra reading is supported. How will this affect her action research? The first thing to note is that she has a finding which suggests she should modify her teaching to ensure that all her students take part in the online discussion forum. In terms of an action research cycle, she may now want to look at coursework, to see if it has the same beneficial effect. She might decide to report her findings at a learning and teaching conference, or she may wish to use this as a pilot study to use as a basis for seeking some external funding. Action research is often collaborative, so another course of action for Dr Jones to consider is to present her

Table 8.6 Comparison of exam performance between groups with different interventions

Group A: Discussion forum	*Group B: Extra reading*
65	48
58	55
62	78
85	55
72	52
65	58
78	52
62	62
65	48
62	58
72	68
68	65
55	58
78	58
42	45
52	55
58	38
68	45
65	42
78	58
65	48
58	55
62	78
85	55
72	52
65	58
78	52
65	62
65	48
62	58
72	68
68	65
55	58
78	58
42	45
52	55
58	38
68	45
65	42
78	58

Table 8.7 Comparison using Mann Whitney of exam performance between online discussion and extra reading

Group	*N*	*Mean rank*
Online discussion	40	52.35
Extra reading	40	28.65

Mann Whitney U = 326, p<0.0000* (conventionally reported as p<0.0001)
*in SPSS it is actually reported as 0.000 which means it is more significant than the four 'conventional' levels of significance commonly used in social science and educational research.

Table 8.8 Comparison using Student's t-test of exam performance between online discussion and extra reading

Group	*Mean exam score*	*Standard deviation*
Online discussion	65.58	9.96
Extra reading	54.90	9.24

Student's t = 4.968, df = 78*, p<0.0001
* df stands for degrees of freedom. This means the total number of scores from your samples that have to be known to fill in any missing scores, given you have the overall total. It is calculated as the total number of scores making up both samples, minus 1.

findings to colleagues in her department to see if others are interested in developing and researching the online discussion forum. Even better, she could invite her students to be co-researchers in a further cycle of action research that might be exploring refinements to the online discussion forum.

Conclusion

When comparing the scores from two independent groups, you have the choice of Mann Whitney (non-parametric) or t-test for independent groups (parametric). Either test is best carried out using a statistical package, although it is possible to calculate them by hand.

Tests of goodness of fit

Finally, in this chapter, I want to discuss the goodness of fit tests. These tests are somewhat different from the ones I have already described, in that they can be used in situations where you do not have measures or scores, but simply observations or categories.

Chi-square

The most commonly used goodness of fit test is chi-square (χ^2), which is particularly useful when carrying out observation studies or for other studies where you are simply getting categorical data (for example simple yes/no answers in a questionnaire study). The usual way of dealing with these data is to put them into what is called a contingency table and then using chi-square you can work out if your observed values are significantly different from values you would expect, to have happened by chance.

Let us suppose Dr Jones has carried out an observation study to test her hypothesis that:

> Students ask questions for further information more frequently in seminars than in lectures, where they tend to ask more questions for clarification.

She carries this observation out over the course of ten lectures and ten seminars and then puts her results into a two-by-two contingency table (see Table 8.9).

Table 8.9 Contingency table based on type of questions raised in lectures and seminars

Type of question	*Lectures*	*Seminars*	*Totals*
Further information	(Cell A) 21	(Cell B) 56	77
Seeks clarification	(Cell C) 19	(Cell D) 11	30
Totals	40	67	107

Because this is an easy test to calculate by hand, I will describe the steps (again, adapted from Clegg, 1983), but the test is also available on SPSS or Excel.

Step 1:
To calculate the expected frequency for each of the four cells, multiply the row total with the column total and divide by the overall N.

Cell A: $\frac{77 \times 40}{107} = 28.8$

Cell B: $\frac{77 \times 67}{107} = 48.2$

Cell C: $\frac{30 \times 40}{107} = 11.2$

Cell D: $\frac{30 \times 67}{107} = 18.8$

Step 2:
Find the difference between the observed (recorded) frequency and the expected frequency (taking the smaller from the larger) and then subtract 0.5.

Cell A: 28.8 – 21 – 0.5 = 7.3
Cell B: 56 – 48.2 – 0.5 = 7.3
Cell C: 19 – 11.2 – 0.5 = 7.3
Cell D: 18.8 – 11 – 0.5 = 7.3

Step 3:
Square each of the values obtained in step 3 and divide the answer by the expected frequency for the cell.

Cell A: $\frac{(7.3)^2}{28.8} = 1.85$
Cell B: $\frac{(7.3)^2}{48.2} = 1.11$
Cell C: $\frac{(7.3)^2}{11.2} = 4.76$
Cell D: $\frac{(7.3)^2}{18.8} = 2.83$

Step 4:
Add the four values obtained in step 3 to give you the value of chi-square (χ^2):
1.85 + 1.11 + 4.76 + 2.83 gives you $\chi^2 = 10.55$

Step 5:
You have to consult a statistics textbook, which gives you significance levels for chi square, which must be equal or bigger than the stated value, but since the degrees of freedom in a simple chi square are always 1, I have presented the χ^2 value needed to be significant at the following levels of significance:

0.05	0.01	0.001
3.841	6.635	10.83

Looking at our χ^2 value of 10.55 we can see that it is not quite large enough to be significant at the higher level ($p<0.001$); therefore we conclude that it is significant beyond the 0.01 level ($p<0.01$).

What this test does not tell you, however, is where the significant differences lie. Like correlations tests, goodness of fit tests do not imply causation, so all we can conclude here is that proportionately fewer questions asking for further information and proportionately more questions asking for clarification were made in lectures than in seminars, so Dr Jones' hypothesis is supported. Chi-square is also available to take care of multiple observations, known as complex chi-square, which is usually best calculated with a statistical package.

Conclusion

Goodness of fit tests such as chi-square are useful for establishing if there are significant differences between categories of data.

Overall summary

The basic tests described here will carry you a long way with your pedagogical action research, and, as I have demonstrated, they can actually be calculated yourself with the aid of a good simple textbook such as Clegg's (1983) *Simple Statistics*, or more recently Kranzler's (2010) *Statistics for the terrified* or Urdan's (2016) *Statistics in plain English*.

Throughout, my intention has been to give you enough knowledge to carry out a publishable action research study. By tackling your research in this way, using simple statistics first, you can pick up more sophisticated knowledge and understanding as you become more experienced and confident. In this digital age, there is a great temptation to go for the most sophisticated analysis possible. In my view, it is much better to choose a simple statistical method that you really understand and can report with confidence when you are embarking on pedagogical action research. I also believe that even in our age of technology, doing calculations 'by hand' is still an effective way of helping you to become thoroughly comfortable with your data. 'Playing around with numbers' gives you a good understanding of what your findings actually mean, which is not always the case when using sophisticated statistical packages.

Answers to the descriptive statistics activity

The total number of posts was 267 made by a class of 20 students: this will give us a mean of 13.35, a median of 12 and a mode of 9. While there was a big range of 30 (31–1), this suggests that there was a fairly good engagement with postings, although a frequency count shows that 40% of the students posted 10 times or less, which is not so encouraging.

In terms of the students' evaluation of the online discussion forum, the mean was 3.35, the median was 3.5 and the mode was 5, which suggests that the forum was evaluated as reasonably effective (but not overwhelmingly so apart from a few students). This is a finding which might warrant further investigation.

Finally, in terms of their assignment marks, the range was 34 (72–38), which is a fairly typical spread; the mean and median were both 55 and there was a bimodal value of 52 and 55. Overall these marks do not seem to demonstrate anything out of the ordinary as regards students' academic performance, so the descriptive statistics give us a picture that is

fairly neutral regarding the effects of the online forum. This may be a case for exploring further using inferential statistics or following up with some interviews to get a more detailed understanding of what is going on.

Synopsis

- In this chapter I have presented the most commonly used descriptive statistics, describing the basic measures of central tendency and dispersion, and, frequency counts.
- In drawing the distinction between descriptive and inferential statistics, I have briefly touched on the basic principles of statistical testing: specifically, testing for significance and probability, as well as some basic guidelines for helping you to choose whether to use a parametric or a non-parametric test.
- I then describe the three main types of inferential statistics: correlation tests, tests of differences in means and tests of goodness of fit. Where I think the tests are reasonably easy to calculate by hand, I have presented a step-by-step procedure. In other cases, I refer readers to statistical packages, such as SPSS or spreadsheets such as Microsoft Excel.
- My advice to those who are unfamiliar with statistics is to start with some simple calculations 'by hand', if possible. This experience can then act as a springboard for you to carry out more complex analyses and use the statistical packages that are readily available. See resources for details.

Further reading for quantitative analysis

Abbott, M.L. (2011) *Understanding Educational Statistics using Microsoft Excel and SPSS*, Hoboken, NJ: John Wiley & Sons.

Brown, B. (2017) *Microsoft Excel 2016 in 90 Pages*, Delray Beach, FL: Belleyre Books.

Clegg, F. (1983) *Simple Statistics. A Course Book for the Social Sciences*, Cambridge: Cambridge University Press.

Field, A. (2018) *Discovering Statistics Using IBM SPSS Statistics*, 5th edn, London: Sage Publications Inc.

Heiman, G.W. (2011) *Basic Statistics for the Behavioral Sciences*, 6th edn, Belmont, CA: Wadsworth, Cengage Learning.

Kranzler, J.H. (2010) *Statistics for the Terrified*, 5th edn, Upper Saddle River, NJ: Pearson Prentice Hall.

Price, M. and McGrath, M. (2016) *Excel 2016 in Manageable Chunks in Easy Steps*, Leamington Spa: Easy Steps Ltd.

Roberts, B. (2016) *Google Sheet Functions A Step by Step Guide* (Kindle edition).

Urdan, T.C. (2016). *Statistics in Plain English*, 4th edn, Abingdon: Routledge.

Internet resources for statistical analysis packages

Capterra: Statistical analysis software. Available at: www.capterra.com/statistical-analysis-software/ (accessed 24 May 2018).

MIT: Libraries statistical software: Overview. Available at: https://libguides.mit.edu/stat (accessed 24 May 2018).

Wikipedia: List of statistical packages. Available at: https://en.wikipedia.org/wiki/List_of_statistical_packages (accessed 24 May 2018).

Chapter 9

How can you use pedagogical tools for your action research study?

Introduction

Wherever possible in carrying out your pedagogical action research study, it is a good idea to use instruments that are already published. Many instruments are presented in journal papers but there are a good many of them that are also readily available on the internet, such as:

- Tait, Entwistle and McCune (1998) Approaches and Study Skills Inventory for Students (ASSIST). Available at: www.etl.tla.ed.ac.uk/questionnaires/ASSIST.pdf
- Biggs, Kember and Leung (2001) Revised Study Process Questionnaire. Available at: www.johnbiggs.com.au/pdf/ex_2factor_spq.pdf
- Norton, Norton and Shannon (2013) Assessment Design Inventory. Available at: www.writenow.ac.uk/outcomes/resources/assessment-design-inventory/

It can be laborious to track down the latest version, and almost always you will need to read through some of the technical details of construction and scoring, but published measures can be exactly what you require. Whenever you use an existing questionnaire you should acknowledge its authors and cite where it is published. I would also advise you to contact the author/s to request their permission to use their instrument in your own research, unless there is a note that says you may use it freely. Even so, I have always thought it a courtesy to approach the authors and sometimes this can lead to them sharing their related research or giving you additional helpful information.

Since existing instruments were not designed for your specific pedagogical action research study, you may need to adapt them. The purpose of this chapter is to describe how you can develop tools to address your specific research issues. In the first section I draw on my own experience in carrying out pedagogical action research to illustrate how you can adapt both

quantitative and qualitative instruments that have been published. In the second section I describe two of my own questionnaire-based research tools, the Ideal***Inventory and the Essay Feedback Checklist (EFC) which you are welcome to use and/or adapt. Both of these are illustrated in case studies by colleagues who have used them.

SECTION 1. HOW CAN YOU DEVELOP AND ADAPT PUBLISHED QUANTITATIVE AND QUALITATIVE MEASURES?

Of course it is perfectly possible to 'start from scratch' and I have described this process in Chapter 6. In my view, it is better if possible to build on what already exists, especially if you are aiming at publishing your research study in a peer-reviewed journal. There are hundreds of questionnaires and inventories and interview schedules in the research literature on teaching and learning that you can use. Some places to start looking for them are suggested in the Further reading and resources section at the end of this chapter, but you do have to be careful in selecting them, as some may be poorly designed and not tested for reliability and validity. Generally, it is a good idea to check the publication for details of how they have been constructed, as even published instruments may not have been rigorously developed. To summarize the pros and cons of using published questionnaires:

Advantages:

- Significant work has been done in developing them.
- They are usually constructed on a firm theoretical basis.
- Good ones publish findings relating to reliability and validity.
- They are largely recognized and accepted by the pedagogical research community.

Disadvantages:

- They can be difficult to track down; they do not always appear in full in the literature with their scoring keys.
- They have not been designed for your specific study, but you can adapt them and/or use certain sections (always contact the author and ask for permission).

In this section, I am going to show you how I have used and developed two examples of published quantitative questionnaires and one example of a published qualitative measure to give you some idea of what can be done in your own pedagogical action research. I begin with the quantitative measures.

Adapting quantitative measures

If you are going to adapt actual items from an existing questionnaire you will need to approach the authors for permission. In my first example, I have adapted some of the items in the original Approaches to Studying Inventory (Entwistle and Ramsden, 1983) and in my second example, rather than adapt the instrument in any way, in this case the Reflections on Learning Inventory (RoLI©), I have adapted the way it can be used.

The Approaches to Studying Inventory (ASI)

For many years, the Approaches to Studying Inventory (ASI) was a frequently used questionnaire appearing in countless pedagogical research studies. It was devised and developed by Entwistle and his colleagues (Entwistle, Hanley and Hounsell, 1979; Entwistle and Ramsden, 1983; Ramsden and Entwistle, 1981) and was designed to measure deep and surface approaches to studying originally identified by Marton and Säljö (1976). Research has shown that students who take a deep approach to their studies, where the intention is to seek meaning, tend to show better academic performance and progress than students who take a surface approach, where the intention is to reproduce knowledge content. To this day there is interest in the effects of the deep-surface concept in higher education. The ASI was developed into several versions and became the forerunner of the Approaches and Study Skills Inventory for Students (ASSIST) as detailed by Tait, Entwistle and McCune (1998).

My colleagues and I drew on the 32-item version of the ASI (recommended by Richardson, 1990) as a starting point for developing our own questionnaire for lecturers. We called this the Module Assessment Questionnaire (Steward, Norton, Evans and Norton, 2003). See Figure 9.1.

The first part of the questionnaire asked lecturers to specify the purpose of each assessment task they set. The second part was designed to see if they would report actually rewarding students for showing evidence of a deep approach in their assignments. What we did was to select the essential elements of a deep approach that could be demonstrated in an assignment. We drew partly from the meaning orientation scale of the ASI and partly from the characteristics of a deep and a surface approach, as described by Entwistle (1987). This gave us 11 items overall that we believed could be readily identified by a lecturer marking an assignment. Nine of the items related to a deep approach and two related to a surface approach. The imbalance was because we were interested in only a deep approach, but we also knew that memorization was an important strategy in some of the five disciplines involved in the research study (Biology, Information Management and Communications, Management and Business, Sociology, and Psychology). Our findings showed that lecturers did reward a deep approach, memorizing was seen by some disciplines as part of a deep approach and only Management and Business did not reward it.

Questionnaire instructions

1. Please identify each assessment task for this module together with a brief description of its purpose (space has been provided for up to three assessment tasks; if you set more than this number, please choose the three that carry the most weighting in your module).

Brief description and weighting of assessment task A…. What do you believe the purpose of this assessment task is?…

Brief description and weighting of assessment task B…. What do you believe the purpose of this assessment task is?…

Brief description and weighting of assessment task C…. What do you believe the purpose of this assessment task is?…

Figure 9.1 The module assessment questionnaire (Steward, Norton, Evans and Norton, 2003)

2. Please consider each of the assessment tasks in your module and tick which of the following you actually reward students for demonstrating.

	Assessment		
	A	B	C
Understanding of theories/concepts			
Understanding of practical applications of theory			
Active engagement with module content			
Evidence that student has built on what s/he already knows in the subject			
Application of understanding of module content to everyday life			
Relating evidence to conclusions			
Examining the logic of arguments			
Memorizing theories/concepts			
Memorizing practical applications of theory			
Evidence of ability to distinguish principles from examples			
Integrating/synthesizing information from different sources			
Other? Please state			

3. If you have any other comments please write them here….

Figure 9.1 (continued)

Summary

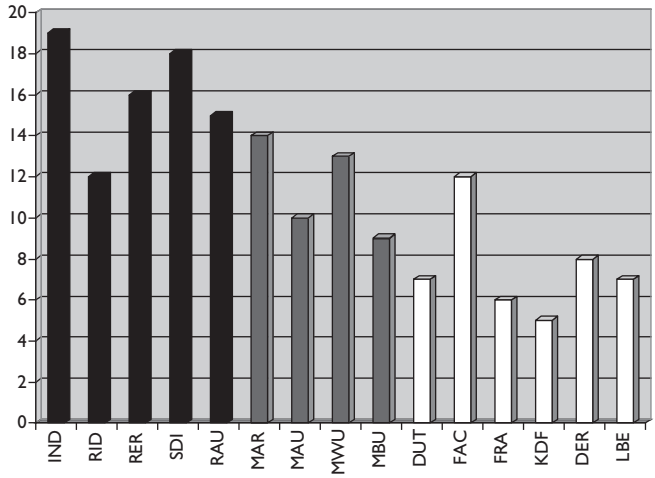
This is an example of how you can use a standardized questionnaire, such as the ASI, as a springboard for your own research, where it is the meaning of the items you want to use rather than the items themselves. Creating item stems for a questionnaire can come from the broader literature or from your own practitioner experience, but it is likely to be a sounder instrument if you can develop it from existing questionnaires.

Reflections on learning inventory RoLI©

This next quantitative measure is an example of a copyrighted instrument that cannot be adapted, but which we used in a number of different pedagogical ways to build students' understandings of themselves as learners in higher education. The RoLI© originated as a measure of conceptions of learning (Meyer, 1995), and was subsequently developed over a long timeframe, being produced in at least ten versions as reported by Meyer (2004).

For a number of years, my university used the RoLI© with the author's permission, as part of a first-year generic Personal Development Planning (PDP) programme. The aim was to help students adapt to the demands of higher education, by reflecting on their own approaches to, and understandings of, learning as measured by their RoLI© profiles. The PDP programme was an institutional initiative that has been reported widely (Norton, Owens and Clark, 2003, 2004; Gayton et al., 2005; Meyer et al., 2006). Students were asked to complete the RoLI© as one element of their PDP module, and then discuss the implications of their resulting RoLI© profile with their PDP tutor, an academic tutor responsible for about 12 students pastorally and academically. The idea was inspired by the work of Lindblom-Ylänne (2003) who used a study counselling approach to help students to interpret their own approaches to their RoLI© profiles. In our case, PDP tutors helped students to reflect on their own RoLI© learning scores *in the context of their academic subjects*. Students were then required to write an assessed reflective essay about what they had learned from their RoLI© profile and from their discussion with their PDP tutor. See Figure 9.2 for an example of a completed hypothetical profile of a student called Suzy.

Although it was not designed as an action research study (which I now regret as a missed opportunity), the work and evaluation of the initiative did draw on some action research principles. I reflected on the outcomes of the first year of the initiative and discussed them with colleagues. This showed two main problems; one related to students and the other to the PDP staff. As far as students were concerned, they really could not see the point of doing this activity, so I refined the approach. In the following year, I gave a lecture (repeated many times) to all the first-year cohort explaining what the various subscales meant, so they could have more detailed information before going to discuss their profiles with their PDP tutor and writing their reflective piece.



Key

High scores on these subscales indicate an approach that fits well with degree level study:

IND Thinking independently

RID Relating ideas

RER Re-reading a text

SDI Seeing things differently

RAU Repetition aids understanding

High scores on these subscales indicate an approach that student may need to adapt if s/he is not doing as well as expected in their degree level study:

MAR Memorizing as rehearsal

MAU Memorizing after understanding

MWUMemorizing with understanding

MBU Memorizing before understanding

High scores on these subscales indicate an approach that may hinder students in doing well in their degree level study:

DUT Learning as a duty

FAC Learning as fact based

FRA Fragmentation

KDF Knowledge as discrete and factual

DER Detail-related thinking

LBE Learning by example

Figure 9.2 Hypothetical example of a RoLI© profile for 'Suzy'

Students were required to attend the lecture and bring their completed RoLI© profiles with them. In the lecture, I used Meyer's analogy of traffic lights where 'green for go' subscales (black bars in Figure 9.2) indicate approaches or beliefs that would help them do well in higher education, so a high score on these in their profile would be encouraging. The 'amber for proceed with caution' subscales (grey bars in Figure 9.2) indicate approaches or beliefs that sometimes help and sometimes hinder students from doing well in higher education. Students were told that if they scored highly on these, they might want to think about changing them only if they were not doing as well as they expected for the effort they were putting into their studies. The third category consists of the 'red for stop' subscales (white bars in Figure 9.2), which indicate beliefs or approaches that will hinder students from doing well in higher education, even if they are putting in a lot of effort.

Looking at the hypothetical student Suzy's RoLI© profile in Figure 9.2 suggests someone whose approaches and beliefs are largely in tune with the expectations of higher education. If I were Suzy's PDP tutor I would have wanted to explore with her the belief she appears to have that knowledge is fact-based (this may be perfectly fine in some subjects but would be epistemologically at odds with others). I would also have discussed whether or not Suzy saw her low score on relating ideas to be a difficulty in her studies and, if so, what strategies she might use to improve on this aspect. This was, in effect, what the PDP tutors were asked to do with their students.

The second problem related to the PDP tutors themselves, as some, but by no means all, felt under-prepared to take on this task as they were not learning and teaching specialists. Part of my response was to invite Professor Jan Meyer as the author to lead two staff development sessions in my university on the RoLI© and how it could be used to build students' metalearning capacity. A further response was that I ran staff development workshops to discuss how the RoLI© subscales could be used as a basis for discussion with their PDP students, and I showed them the lecture PowerPoint that I was giving to their students.

Summary

This example shows how you can sometimes adapt the context in which you use a published tool that cannot itself be altered. If you plan to introduce an institutional initiative, such as the one described, this would inevitably have a considerable impact on the student learning experience. As I discovered, it was well worth doing but was not without its challenges. If I'd had the foresight, it would have made for an interesting piece of action research.

Adapting qualitative measures

In the following example, I describe how you can adapt an interview methodology to an open-ended questionnaire method as a way of assigning students to developmental stages.

Reflective judgment

I have chosen King and Kitchener's (1994) work on reflective judgment as it has influenced my thinking both conceptually and empirically. King and Kitchener postulate a developmental progression that occurs between childhood and adulthood. They explore how people understand the process of knowing and how they justify their beliefs about what are described as ill-structured problems, to which there is no single easy answer.

In their model they describe seven stages that represent distinct assumptions about knowledge and how it is acquired. The stages are hierarchical. Each successive stage represents a more complex and effective form of justification with more inclusive and better-integrated assumptions for evaluating and defending a point of view:

- Stages 1 to 3 are identified as 'pre-reflective thinking.' Knowledge is thought of as almost always stable and certain, gained either by direct personal observation, or through authority figures.
- Stages 4 and 5 are called 'quasi-reflective thinking'. Knowledge is conceived as uncertain and contextual. People at this stage have difficulty in understanding how to make judgments in the light of this uncertainty. They typically argue that judgments ought to be based on evidence but their evaluations are often idiosyncratic and individual.
- Stages 6 and 7, according to King and Kitchener, are the only stages that are truly indicative of reflective thinking. Reflective thinking reflects epistemic assumptions that our understandings of the world are not given but must be actively constructed by understanding knowledge in the context in which it was generated. People at this stage understand that while there is no absolute certainty, some explanations can be evaluated as more reasonable than others. King and Kitchener claim that true reflective judgment is more advanced than Perry's (1970) top stage of intellectual development.

In order to establish what stage an individual was at, King and Kitchener (1994) devised the reflective judgment interview, which was a semi-structured interview lasting about an hour. The format was to present interviewees with up to four statements representing ill-structured problems such as the use of nuclear energy or food additives, for which there is no straightforward answer. The interviewer would then use a series of probes including how they came to their point of view, and on what basis they held it even if experts in the field disagreed.

Adapting the ill-structured problem interview

We were interested in exploring whether students' levels of reflective thinking would develop over the course of the first year of higher education, using King

and Kitchener's (1994) model (Norton, Kahn, van Arendsen and Walters, 2001). Instead of using their interview design, we adapted an open-ended questionnaire format. We also adapted their concept of an ill-structured problem to ask students what they thought the study of their subject was about. Students in Psychology, Mathematics and Music were asked to take part in the research, which involved completing an open-ended questionnaire twice: once at the beginning of their first academic year and once at the end. Our questionnaire had only two questions:

1. 'What do you think the study of Psychology/Mathematics is about? Please answer in around 150 words.' Music students had a slightly different version: 'What do you think instrumental practice is about? Please answer in around 150 words.'
2. 'Please explain in around 150 words why you hold this view.'

The questionnaire scripts were read and re-read by a research assistant to get a feel for the depth and quality of the thought processes used in the responses. Next, he assessed each script, using both the answer to question 1 and more importantly, the answer to question 2, which explained their reasoning, to compare with King and Kitchener's criteria for each stage.

A small sample of 28 questionnaires was independently rated by one of the other researchers, which gave an inter-rater reliability of 61 per cent. This was not sufficiently reliable as we found it difficult to make fine distinctions between the stages in the students' responses. When we used, instead, the three main levels of pre-reflective, quasi-reflective and reflective judgment, the inter-rater reliability increased to 86 per cent, which was considered satisfactory. This open-ended questionnaire was followed up with a small sample of telephone interviews.

An example of pre-reflective thinking from a Psychology student was:

> Explanation: *'I feel that the study of psychology is about the mind i.e. how the brain responds to different influences that are placed on the body. Things like alcohol as this slows reactions etc.'*
>
> Justification: *'I hold this view as I have a small amount of knowledge on sport psychology having studied this for two months at college.'*

This was markedly different from the following excerpt from a lengthy example that we described as reflective thinking:

> Explanation: *'The word "psychology" covers a lot of areas and may be described as an extremely profound word. Personally I interpret the word psychology to mean an exploration of the human mind and how and why it provokes an individual to act in the way that they do...'*

> Justification: '*I believe that the interpretation of the word 'psychology' is thoroughly personal. . .'*
>
> (Norton et al., 2001, pp.125–126).

Crucially, this particular student went on to say that they may well have a different understanding of psychology once they had completed their studies in the subject. This would fit with King and Kitchener's description of this stage, which states that understandings of the world are constructed in the context in which the knowledge was generated.

Our overall findings showed that most of the students from all three subjects gave answers at the pre-reflective stage of thinking at the start of their undergraduate study. Furthermore, there was little progression to higher stages at the end of the year. Some small differences were observed between the disciplines, with Psychology students having slightly higher percentages operating at the quasi and reflective stages than Mathematics and Music students.

Summary

In this example, the open-ended questionnaire format was perhaps too crude an instrument to measure the complexity of critical reasoning and reflective judgment. This was apparent in the low inter-rater reliability when attempting to use all seven stages. If we had been able to use these finer distinctions, we may have detected more movement overall at the end of the year. Had we replicated this study in a further cycle of action research, we would have developed the open-ended questionnaire by making the questions relate more specifically to the seven stages for each discipline.

If you were thinking of adopting a methodology like this in your own action research, it would be a good idea to run a pilot study first, to see how the analysis process works. This enables you to make changes in the questions you are asking before you expend a considerable amount of time and effort in a main study.

SECTION 2. TWO TOOLS FOR A DUAL PURPOSE: PEDAGOGY AND RESEARCH

These two tools are the 'Ideal***Inventory' and the 'Essay Feedback Checklist.' I describe them here as they are simple and adaptable for many different types of pedagogical action research, and because they have been used by other colleagues. I include two case studies as examples.

The Ideal***Inventory

Background

An earlier brief description of this tool can be found on my website www.linnorton.co.uk/research-instruments/the-idealinventory-a-tool-for-pedagogical-research.

It originated as the Ideal Self Inventory (Norton, Morgan and Thomas, 1995). This was designed as an alternative to published self-esteem questionnaires by providing a constructivist measure of what respondents themselves thought were salient to their self-esteem. My original idea for the basic design drew on principles of Kelly's (1955) personal construct theory by asking respondents to describe their ideal self in terms of what they personally thought was important to them. As such, it was a variation of the self-grid used by Button (1994) who asked people to elicit constructs and then to rate themselves using the concepts of 'present self' and 'ideal self'. In our version we used a variant of the Osgood Semantic differential scale to ask participants to generate characteristics using two poles: the 'ideal self' and the 'not ideal self'. The distinctive feature of the original Ideal Self Inventory was that not only did participants decide for themselves what features were salient to them in relation to self-esteem, but also they were asked to rate themselves in terms of where they actually felt themselves to be on each dimension. See Figure 9.3 for an example of a fictionalized Ideal Self Inventory.

Using the Ideal Self Inventory in this way enables you to get a qualitative measure, in terms of the dimensions the participant generates, which might tell you something interesting about how that individual conceptualizes self-esteem. In the example given in Figure 9.3, this particular individual, a female lecturer, is concerned with intelligence, taking a conscientious approach to life, being contented and confident – and being slim. This is a combination of characteristics that few standardised measures of self-esteem would produce.

Ideal Self	**5**	**4**	**3**	**2**	**1**	**Not ideal self**
Intelligent and quick to grasp things		✓				Stupid and slow learning
Slim	✓					Fat
Conscientious	✓					Couldn't care less
Contented with life			✓			Never satisfied, always wants more
Confident					✓	Full of doubts

This represents a total self-esteem score of 18/25, but each dimension also has its own score out of 5.

Figure 9.3 An example of a fictionalized Ideal Self Inventory

The inventory also yields two quantitative measures, an overall self-esteem score and discrete scores for each of the dimensions. In Figure 9.3 the respondent has a total score of 18 out of a possible 25, so would seem fairly high in self-esteem but when you look at her scores on each dimension, you can see some large variations, particularly on the last dimension where she sees herself as 'full of doubts' rather than 'confident', and where she only scores 1 out of a possible 5. Such a tool can give you a sense of where the variations in overall self-esteem lie.

Using the Ideal***Inventory for pedagogical action research

This flexible tool can be adapted to suit your pedagogical research topic, which might be discipline specific such as students' conceptions of the ideal way to teach:

- bioethics;
- fluid mechanics in engineering;
- legal information research skills;
- midwifery.

Equally, it can be adapted for more generic pedagogical topics such as the ideal:

- lecturer;
- student;
- seminar;
- work placement.

The best way to illustrate some of its potential is to describe some ways in which you can develop it. In my example, I have chosen the 'ideal lecture' and let us assume that the focus is on lecturers' conceptualizations rather than that of students (see Figure 9.4).

Step 1: Constructing an individual 'ideal lecture' inventory

Ask your participants to generate their own characteristics of the lecture using the concept of an 'ideal/not ideal' dichotomy. The number of dimensions you want depends on the nature and purpose of your research, but usually I have found that between five and ten works well.

It is important to tell participants to do this row by row, by thinking first of a word or short phrase to capture the essentials of an 'ideal' lecture and then doing exactly the same to capture the opposite end of the dimension: the 'not ideal' lecture. When row 1 is completed, participants move onto row 2 and so on until all the dimensions are completed. This process is important as you want your participants to think in terms of the whole dimension rather than list some characteristics for the ideal pole and then list their opposites for the not ideal pole. It is also

Ideal lecture	5	4	3	2	1	Not ideal lecture
Interactive and involves students	✓					Delivers information
Well - prepared Interesting	✓		 ✓			No effort Boring
Relates to students' previous knowledge			✓			Does not build on anything
Inspirational Informed and up to date	✓	 ✓				No enthusiasm for topic Second hand
Applies theory to real life examples		✓				Theoretical

This represents a total score of 29/35.

Figure 9.4 An example of a fictionalized 'Ideal Lecture' inventory

important to tell them that when they are thinking of how to describe the 'not ideal' pole for each dimension, their word or phrase does not have to be a literal opposite, as it is how they conceptualize the dimensions that you are interested in.

Step 2: Self rating an individual 'ideal lecture' inventory

When all the dimensions are completed, ask your participants to think of the last lecture they delivered and rate it on each of their dimensions. At this stage, you might want to carry out a study where the participating lecturers used their 'ideal lecture' inventory to ask students to rate the same lecture. Alternatively, they might want to rate several different lectures themselves, or the same lecture at different times: the possibilities are endless. It may be, though, that instead of using individual inventories in this way, you would prefer to use a composite version.

*Step 3: Constructing a composite Ideal***Inventory*

This can be done by collating the responses on the individual inventories and carrying out a content analysis (see Chapter 7) on the inventories to arrive at a composite list of the most frequently mentioned dimensions. Since the inventory allows participants to use their own words or phrases, you will have to make

a number of judgments on meanings, so establishing a measure of inter-rater reliability is a good idea.

If you are interested in using the ideal inventory as a staff development exercise, you can ask colleagues to share, discuss and come up with their own composite list in small groups. I have found this works very well in workshops and can be used either with staff from the same department or in an inter-disciplinary context. Often, the actual process itself is the most illuminating part of the whole procedure as it opens up the way for dialogue and discussion on pedagogical issues in a non-confrontational way. This variation was first introduced by Williamson (2002) who actually used it with his students to engage them in understanding through group discussion what was required in finance and accounting programme.

Step 4: Self rating a composite ideal lecture inventory

Before asking your participants to complete a composite inventory, make sure that it appears as neutral as possible, to guard against getting socially desirable responses. The following hints may be helpful:

- Do not title the columns 'ideal' and 'not ideal'.
- Construct the inventory so that all the 'ideal poles' of each dimension do not appear in the left-hand column and all the 'not ideal' poles do not appear in the right-hand column.
- When scoring the inventory give 5 to the point nearest to the ideal pole and 1 to the point nearest to the not ideal pole, but remember to reverse the scoring where appropriate.
- Give 'neutral' instructions such as: 'Circle the point that is closest to your experience/attitude/belief for each dimension.'

Step 5: Qualitative analysis

Analyzing the data depends very much on the purpose of your research. If you are interested mainly in lecturers' conceptions of an ideal lecture, for example, you may want to report on the content analysis as an analysis in its own right, as representing a departmental view.

Step 6: Quantitative analysis

Let us imagine you are interested in the relationship between lecturers' perceptions of their own lecture and the amount of time they felt they had to prepare that lecture. You could carry out a simple correlation between the overall score on each lecturer's ideal lecture inventory and the number of hours' preparation time. Alternatively, you might want to use a composite inventory and ask each lecturer to rate his or her lecture against this composite version and then carry

out the correlation. Another way you can use the data is if you are interested in individual lecturer scores on specific dimensions. Supposing, for example, that you obtained a composite dimension of 'well-prepared' versus 'poorly-prepared'; you could use this for descriptive statistics or inferential statistical analysis, as described in Chapter 8.

Case study

A colleague of mine, Dr Babs Anderson, has successfully adapted the Ideal***Inventory in her work and research with students on an Early Childhood Studies course as described below.

The 'Ideal Student' inventory: a case study by Babs Anderson, Liverpool Hope University

I have used the Ideal***Inventory in my own teaching to examine whether a particular intervention had an influence on students' perceptions of themselves as learners. This arose from my concerns that student autonomy and increasing self-direction was under pressure from curriculum content and over-reliance on myself as the tutor as the more knowledgeable other (Vygotsky, 1986).

My intervention used the strategy known as Philosophy for Children (P4C), where groups of learners generate their own questions based on a provocation and then proceed to discuss the most interesting question as a group. This approach is used increasingly in educational institutions in the UK and elsewhere, including the Higher Education sector (Anderson, 2016).

A cohort of 120 Early Childhood second-year undergraduate students participated in the research, having given informed consent. At the beginning of the academic year, they identified five key characteristics of an ideal student individually and ranked these in order of importance. They then collaborated in groups of around 10 students to create a combined set of characteristics. Finally, once the groups had made their decisions, I synthesized these to create a cohort version, checking with the students that this was a fair representation of their ideas. At this point, the opposites of these characteristics were included to create seven dimensions, with the two poles separated by a set of asterisks. The asterisks were deliberately chosen in order to reduce a bias against using the extremes that numerical values may have caused. The students then anonymously completed these inventories, giving themselves an identifying code based on their own memorable information, unknown to myself.

The chart below gives the cohort version of the ideal student.

Engages with the subject matter, including preparation	*******	Does not engage or prepare readings, etc
Relies on the tutor for guidance	*******	Acts independently to research
Respects others' opinions, even when you disagree with them	*******	Reluctant to accept differences of opinion
Actively want to learn, showing resilience when ideas are challenged	*******	Finds feedback difficult
More interested in own learning rather than group	*******	Contributes to group learning as well as own

The P4C intervention took place over a series of six sessions, spaced through the academic year. At the end of the teaching year, the original inventories were returned to the students. They then completed their inventory from their self-perceptions for a second time. The findings from the project were that the self-ratings at the end of the year had moved significantly towards a more 'ideal' status. It may be that the intervention had specifically enhanced this; however, student maturity also may have had a part to play.

The following year, a reflective commentary section was added to each of the dimensions in order to enhance the students' learning from prior experience.

Actively want to learn, showing resilience when ideas are challenged	*******	Finds feedback difficult

Personal examples of this:

Reflection

On reflection, I realized that I enjoy using the inventory, for both personal and professional reasons. Personally it fits with my own preferred way of learning within a socially constructed framework, based on an individual consideration of a topic, which is then shared with others. It seems to me

that ownership of deep learning must involve personal engagement taking on the social risk of articulating one's own ideas to a larger group. Professionally, it enables me to gain a glimpse into the values, beliefs and opinions of the students and my aim to design a curriculum, which takes account of these.

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Summary

The Ideal***Inventory is a generic tool for pedagogical research. Its particular advantages lie in its flexibility and how it can be adapted to suit a number of different research and teaching purposes. Its disadvantages lie in its very flexibility, which sometimes means the analysis can be tedious and time consuming (Perrin, Busby and Norton, 2007). Another disadvantage is that it requires a considerable amount of interpretation from a limited number of words or phrases. However, as a tool used to stimulate dialogue in an educational context as well as a flexible research instrument, it may be something worth trying and adapting for your own purposes.

The Essay Feedback Checklist (EFC)

This second tool is one that I have used a great deal with my students to try to improve the feedback I give them and help them write better essays. The Essay Feedback Checklist (EFC) has been, like the Ideal***Inventory, not just a research tool but also a pedagogical one.

Background

This tool has been well documented as it has been used in action research designed to help students improve their essay writing (Norton et al., 2002; Mansour, 2015). It has also been used in pedagogical research (Defeyter and McPartlin, 2007; Wakefield et al., 2014). It is described fully in Campbell and Norton (2007) and is available on my website www.linnorton.co.uk/research-instruments/the-essay-feedback-check-list-efc so it will only be briefly described here.

Basically, the EFC is a tool that lists the assessment criteria for a specific task and then asks students to rate the assignment for each assessment criterion and hand it in with their assignment. In this way it is meant to act as a reminder to

Table 9.1 Fictional example of a comparison of first-year History students' and tutor's ratings of the subject assessment criteria expressed in percentages

Assessment criterion	*Students (N=100)*			*Tutors (N=3)*		
	C	*P*	*N*	*C*	*P*	*N*
Structure and focus	20	50	30	40	30	30
Quality of argument	10	30	60	15	75	10
Written expression	30	50	20	20	40	40
Range of knowledge	40	50	10	10	60	30

Key: C = Confident I have met this criterion; P = Partially confident; N = Not at all confident.

students about the essential elements of their assignment that they should be focusing on while they are actually writing. Many such feedback sheets are commonly used, of course, but where the EFC differs is that there is a space also for tutors to give their rating for each of the assessment criteria, so where there is a difference between student and tutor ratings, the tutor can spend more time giving specific feedback on that particular criterion.

The EFC is an example of how you can design a simple tool with a pedagogical purpose – that of improving your feedback to students – but you can also use it for research; that of comparing students' ratings with tutor ratings. See Table 9.1 for an example.

As you can see, the findings generated by completion of the EFC can be used descriptively and statistically to find out where students appear to be having the greatest difficulty. In this example, the biggest mismatches between students' and tutors' ratings were in:

- matters of written expression and range of knowledge where tutors thought the students did less well than did the students;
- quality of argument, where tutors thought that students did better than did the students.

These findings might lead the History tutors to analyse more closely what academic writing and argument means in the context of studying History. Further cycles of action research might involve other staff in the department to seek their conceptualizations of History as an academic field of study. These could be compared with students' conceptualizations. Of course this would be just one way of progressing the research and it would depend on what came out of the reflections on the first action research cycle.

This is one (fictional) way of applying the EFC and developing it within an action research framework. A real life example of how the EFC was used in an action research project in management studies is presented in the following case study by Dr Hala Mansour.

Using the essay feedback checklist to give feedback to doctoral students: a case study by Hala Mansour, University of Northampton

The context

Feedback is important for students' learning because it helps to acknowledge what students have done well, advising and providing suggestion on how to do it better (Wang and Li, 2011). In doctoral students' supervision, feedback is essential to provide constructive information to assess students' progression. For example, doctoral study is encouraging intellectual discussion and argument, and feedback should support the intellectual and creative writing and ideas.
Wang and Li (2011, p.102) argued that '*feedback in doctoral research is a social practice embedded in supervisory relationships*'. Therefore, it is important to create two-way communication for feedback (Norton, 1990, 2009). So, it is not just what the supervisor says but it is also considering engaging the student in a creating, challenging and empowering dialogue through the feedback.

The problem

I have noticed in one of my observations in PhD supervision meetings in a Doctor of Business Administration (DBA) programme that most of the feedback provided was about the limitations and the shortage of writing ideas. I was determined to have a discussion after each supervision meeting with the supervisors about this. Both supervisors acknowledged my ideas, but they also explained that their main objective was to produce better work. At the same time in an interview with the student, it was clear that the student had an expectation to receive more positive feedback. This reflects a mismatch of expectations. I believe that a balance between providing constructive criticism and positive feedback to students is essential:

> To build students' confidence, it is important occasionally to word feedback in a generalized or positive tone.
>
> (Delamont, Atkinson and Parry, 1997, p.29)

Therefore, supervisors of doctoral students should be careful of the meanings of the language they use in their feedback because it may create sometimes a negative emotional response for students that may demotivate

them. Students may believe that the feedback provided for their work is a direct criticism of them personally as indicated in Figure 1 below.

You write:	*They read:*
This is unclear	I am unclear
This is wrong	I am wrong
This needs a lot of work	I need a lot of work
This is not PhD standard	I am not PhD standard

Figure 1 The Thesis versus the Person from: http://ithinkwell.com.au/

Hattie and Timperley (2007) have provided a framework for providing feedback that considers: feedback on the task; processing the task; self-regulation and self as a person. See Figure 2 below.

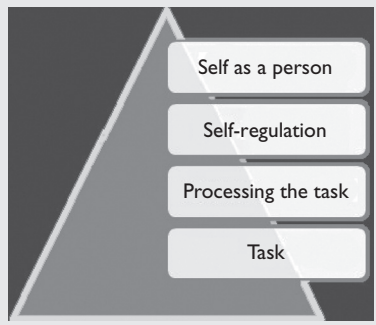

Figure 2 Levels of Feedback. Adapted from Hattie and Timperley (2007)

It has been suggested that supervisors need to discuss their expectations from the supervisory relationship as well as seeking support and training for academic writing and feedback.

The action

One of my main reflection experiences from supervising doctoral students is that I started to think about a feedback form that could help students to engage while they are writing their work and after they receive the feedback. Therefore, and based on my use of the Essay Feedback Checklist (Mansour, 2015), I created the form shown in Figure 3 to be piloted with doctoral students. The structure of this

Criteria	*Completely confident*	*Partially confident*	*Not confident at all*
- Originality			
- Organization			
- Engagement with theories			
- Dialogue with academic community			
- Publishability			
- Readable expression			
- Coherence of the text			
- Conceptual as well as factual findings			

Figure 3 The Thesis versus the Person from http://ithinkwell.com.au/

Adapted from characteristics of a good PhD (Winter et al., 2000).

form suggests that a dialogue approach is needed for feedback. The criteria expected from the work helps to create awareness of supervisors' expectations. It also encourages participating and engagement in the discussion. The self-assessment for students on their work could help in developing their research skills too, for example, in judging and reviewing academic work, empowering students to have a discussion after receiving the feedback and creating a critical observation between the supervisor and the student. The EFC form (Norton, 1990, 2009) has been also tested with DBA students in their first module of the programme.

The initial feedback from students who used the form was that it is helpful to remind them of the main requirements for their work. My observation is that the form could initiate a clear and open communication with doctoral students and particularly with international students to get effective feedback. A dialogue space should be created within the supervision relationship and the feedback provided to support better understanding and effective experience for doctoral students.

Conclusion

Based on a reflective account of a number of observations on PhD supervision meetings at a British university and in describing my experience from the observations, it is worth noting that supervision for doctoral students is closely related to our professional identity as academics. One of the qualities of supervisors is to be

able to direct and support high quality competent PhD candidates who can create innovative ideas that lead in new research directions. Feedback therefore is essential to achieve these objectives. Using the EFC and developing a version to help doctoral students engage more with feedback helped me to reflect deeply on my practice and thinking critically on my learning experience for doctoral supervision. It helped to raise self-awareness for PhD supervision and how it impacts on the supervisor and the student learning experience.

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Summary

The Essay Feedback Checklist is a dual-purpose tool designed to help students improve their essays, by enabling tutors to give targeted feedback. It also gives students practice at judging the worth of their own work, as well as acting as a reminder to them about what to focus on when writing their assignments. Sadler (2013, p.55) argues that:

> The task of teachers is not to coach students through the production of particular complex responses by offering ongoing judgements about quality,

> together with advice on how to improve them. It is to teach students how to judge quality and modify their own work *during production* [my emphasis].

It can also be used as a research instrument for pedagogical action research. Although it is termed the *Essay* Feedback Checklist, it can easily be adapted to any assignment. Its disadvantages are that students might feel concerned that if they give an honest rating this will affect their tutor's mark. This can be dealt with by assurances that you will not look at it until you have marked the essay. The other disadvantage is that some staff do not like giving feedback in this way but prefer to write on the essay itself, so completing the EFC afterwards makes for additional work.

Overall, the EFC could be a useful tool if you are interested in carrying out pedagogical action research studies in the area of improving students' academic writing skills in assignments and/or in feedback.

Synopsis

- The purpose of this chapter is to demonstrate some of the pedagogical tools that can be used and adapted in pedagogical action research.
- In the first section, I have taken examples from my own pedagogical research to give you an idea of what is involved in adapting and developing published tools and methodologies. I look at two examples of quantitative measures and one example of a qualitative measure. The studies that I have presented were not designed as pedagogical action research studies but as I progressed through my own research career, I found myself drawing more on the principles, characteristics and insights that action research affords.
- In the first of the quantitative measures, I have described how the Approaches to Studying Inventory (ASI) was used as a resource for generating items in another questionnaire with a different purpose.
- In the second example, I have taken a different approach by showing how the Reflections on Learning Inventory (RoLI©) can be used as part of an institutional initiative to help students understand themselves as learners. In this example, I was trying to demonstrate what can be done with a published measure that cannot itself be altered.
- In the qualitative measure, I described how an interview methodology can be adapted to a questionnaire methodology. Using the example of reflective judgment which produces hierarchical categorizations indicative of student development, I have shown how written responses can be categorized into existing frameworks.

- In the second section, I describe two of my own tools that you are welcome to use in your own context. Both are illustrated in case studies by colleagues who have used them in their own practice:
    - The Ideal***Inventory is a generic questionnaire designed to allow participants to generate their own characteristics of whatever topic is being researched and then rate themselves.
    - The Essay Feedback Checklist can be used to more effectively target tutor feedback, as well as to remind students about the assessment criteria *as they write* their essays.
- Throughout the chapter, my emphasis has been on showing what can be done when you undertake pedagogical action research, by building on existing instruments and methods.

Further resources

How to find published instruments

These can be found most easily in learning and teaching journals. See for example:

- *Assessment and Evaluation in Higher Education*
- *Higher Education*
- *Innovations in Education and Teaching International*
- *Research in Higher Education*
- *Studies in Education*
- *Teaching in Higher Education*.

They can also be found using internet resources. See, for example, big research project websites such as the **Enhancing Teaching-Learning Environments in Undergraduate Courses project** (funded by the ESRC Teaching and Learning Research Programme). Online. Available: www.tla.ed.ac.uk/etl/publications.html#measurement. This is a particularly rich resource as it makes available four instruments, which are particularly relevant to pedagogical action research:

- Experiences of Teaching and Learning Questionnaire (ETLQ) plus a version for Chinese students
- Shortened Experiences of Teaching and Learning Questionnaire (SETLQ)
- Learning and Studying Questionnaire (LSQ)
- Approaches and Study Skills Inventory for Students (ASSIST).

Chapter 10

What are the ethical issues involved in pedagogical action research?

Introduction

When considering ethical issues in pedagogical research, there is an intersection between the nature of pedagogical research and the nature of action research. Researching into learning and teaching practice within our own institution raises a number of pedagogical ethical dilemmas. It is relatively easy to convince ourselves that the research we do on students' learning and on teachers' teaching at university is for the greater good of improving both. But what happens if such research shows our institution in a bad light, or the students, or our fellow colleagues, or the subject? How do we know we are not abusing our power as a teacher by researching the very people we are supposed to be helping to learn?

The following point of view is expressed by Ruth Balogh who has most generously commented on all my chapters as well as writing the foreword to this book. With her permission, I am presenting an extract from her comments:

> I have some issues with the way that 'ethics' is framed in this chapter. This is because of the way that action research is generally framed explicitly as an ethical endeavour. John Elliott explores this at the beginning of his book *Action Research for Educational Change* (Elliot, 1991), citing philosopher of education Richard Pring (2001), who argues that ethics is central to educational research. Elliott extends this to educational action research. Ethics is not just another consideration for action research – it underpins it.
>
> The appearance of ethics at centre stage brings a different kind of ethical responsibility to the action researcher from that within the traditional science – and later, social science, paradigms for which ethical review committees were constructed. The origin of ethical review derives from the unethical behaviour of medical practitioners in Nazi Germany who did not care about doing harm to people they considered inferior, and this is why protection from harm, quite rightly, forms such a central element in the Nuremberg Code (Shore, 2014).
>
> But the presumption that there's a risk of harm from social research is questionable. There are many examples in traditional social science, where research almost acts as a kind of therapy and people feel it really has improved things for them – especially when they find a voice they didn't previously

have. I found this to be the case in research I did with colleagues on the health and social impacts of flooding (Carroll, Balogh, Morbey and Araoz, 2010); people really welcomed the chance to share their experiences. This may not have any major ethical consequences, but it does reframe the ethical background.

I first learned of the kind of consequences this may have in a case at a CARN (Collaborative Action Research Network) study day in Liverpool of an action research project which had been carried out with parents of children receiving end-of-life care. In line with ethical procedures their anonymity had been guaranteed. But they didn't want it when the time came for publication and asked for it to be rescinded. They positively wanted their names – and the names of their now deceased children – to be acknowledged. In hindsight one can well understand this position. And one can also understand the researcher's initial position that such a sensitive issue might well result in the kind of painful disclosure that might constitute harm.

This is an example of how ethics, for an action researcher, goes beyond getting ethical approval. Like that of a professional – which essentially the action researcher is – there is a constant need to examine what one does in the light of emergent ethical considerations. In this latter case it would be considered appropriate to return to the ethics committee to get their approval for changing the terms and publishing the names.

The need to re-visit ethical issues during the course of an action research project thus becomes important. It offers a way for action researchers to check with participants their feelings about the effect on them of taking part in an AR project. Often, such review is built in to the cycles of AR. As in the case above, the only way of testing our assumptions as researchers is to perform checks with participants.

I also question your analysis presented at the beginning of the chapter, that 'all ethical codes agree' about certain requirements for the ethical conduct of research. The above argument indicates that things are not so straightforward. It illustrates the sometimes problematic nature of assuming a risk of harm, and also assuming a need for anonymity and confidentiality. I would argue it's necessary to see ethical codes as culturally constructed entities which can also be challenged as such. Again, an example is useful. At the former St Martin's College (now University of Cumbria) we developed an internal ethical review process framed around social justice. This embraced the traditional framework of avoiding harm etc. but widened it to consider whether research projects were conceptualized as socially just. This led us to occasionally return projects for deeper analysis, something that would not have been possible under the traditional framework, which would have left us feeling uncomfortable about those projects whose ethical standpoints had not been examined, as we'd have had no remit to challenge and offer help.

Ruth Balogh, University of Glasgow, 2018

Types of research

Most codes of practice in ethics focus on research with human participants, so apply to learning and teaching enquiry. This is sometimes referred to as pedagogical research which can itself be subdivided into two interrelated areas: pedagogic development (pedD) and pedagogic research (pedR). These were described in a useful report to the Higher Education Funding Council for England (HEFCE) by Gordon, D'Andrea, Gosling and Stefani (2003). Briefly, they see these as useful for describing features of enquiry that contribute to the field of the scholarship of teaching and learning.

Pedagogical development (PedD) tends to include activities which have a practical focus rather than a theoretical one, and where dissemination may be presented as examples of good practice to one's colleagues or perhaps in workshops. Pedagogical research (PedR) tends to be more formal enquiry, with accepted research methodology and is likely to be aimed at a wider audience, often through conference papers and publications. I want to add a third category to Gordon et al.'s typology. In my view,

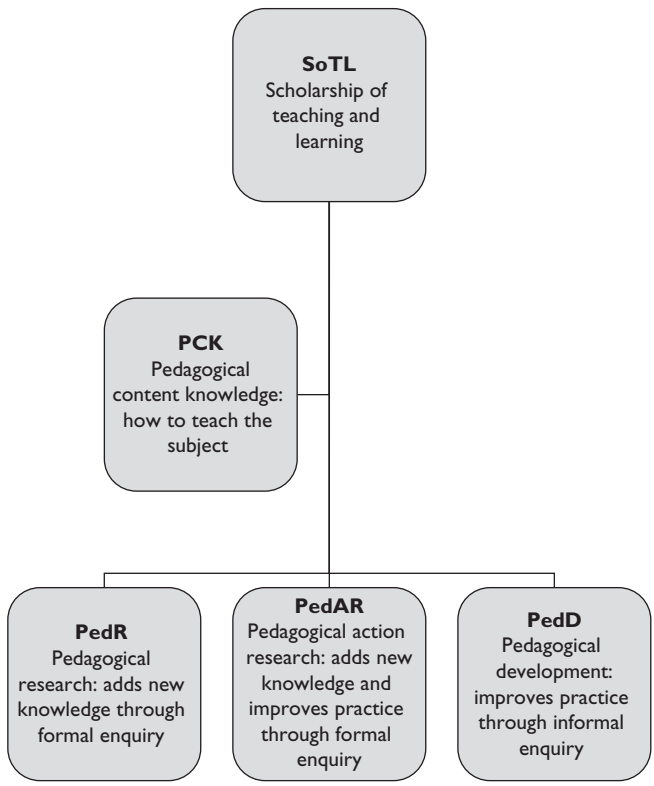

Figure 10.1 Chart showing the interrelating aspects of PCK, PedR, PedAR and PedD within the scholarship of teaching and learning

Pedagogical Action Research is a third interrelated form of enquiry, which includes some elements of both PedD and PedR (see Figure 10.1). Originally, in my past work and publications I abbreviated pedagogical action research to PAR but to save confusion with participatory action research, I now use the abbreviation of PedAR. All three contribute to pedagogical content knowledge (PCK), a term introduced by Shulman (1986).

Not everyone in higher education is familiar or comfortable with these terms, sometimes regarding them with some suspicion and scepticism, but for the purposes of this chapter I am going to use them in order to discuss specific ethical issues. Below I offer my own understandings of these terms and the distinctions between them.

Terms

Pedagogical research (PedR) is a form of enquiry that has learning and teaching processes as its focus. It can be large- or small-scale and can be carried out in a range of educational contexts ranging from pre-school to higher education and beyond. It is always founded in theory.

Pedagogical action research (PedAR) is a systematic investigation of some aspect of professional practice in an education context (most usually higher education). Like action research from which it is derived, it has a dual aim of investigating one's own practice while at the same time contributing to theoretical knowledge in pedagogy.

Pedagogical development (PedD) is work that is done to enhance or improve the student learning experience. It can be curriculum development or innovations in learning and teaching. It is practical rather than theoretical and is small-scale and contextualized in the developers' practice. It may be informed by pedagogical research and/or pedagogical action research.

Pedagogical content knowledge (PCK) is a combination of subject knowledge and knowing how to teach it so that students can understand. It is much more than an accumulation of teaching skills as it involves an understanding of students as learners, in both discipline-specific and generic contexts. It too may be informed by pedagogical/pedagogical action research.

Scholarship of teaching and learning (SoTL) continues to be a contested area with many different definitions and models (see Chapter 3). What is agreed is that it is a movement that is steadily gaining influence in post-secondary education. It has a focus on making its scholarship public, through research and through public critique to advance the field. It is broader than discipline-specific enquiry into how students learn and teachers teach, and may encompass pedagogical (action) research.

One of the issues that can face us when seeking ethical approval is how to demonstrate the distinction between pedagogical (action) research and pedagogical development. This was a challenge that I faced when writing about the proposed action research study on essay plan feedback described in Chapter 2. The research aim was to compare the way that four course tutors typically gave feedback, as our strategies were all slightly different. The sticking point with the ethics committee was my own strategy. I had asked students to write a paragraph on how they had used my feedback in their submitted essays and whether or not they found the process helpful. The ethics committee was concerned that marking the essays should not take into account the 'how I used the feedback' paragraph. To my mind this was an initiative I would have carried out anyway, as a pedagogical development that is already used in several universities. However, I had not made it clear that the evaluation of the process was a separate questionnaire to be given after the essays had been submitted and marked. Since the proposed study did not materialize, these fine distinctions were not further explored in the ethical approval process, but the experience was a valuable one. I often tell my doctoral students about the importance of good explicit research design in an ethics application form, but on this occasion this was what I had singularly failed to do.

Fundamental principles of ethical research

Having acknowledged Ruth Balogh's persuasive arguments about the different kind of ethical responsibility in action research, I am focusing in the rest of this chapter on some of the widely used codes of ethical practice.

I have drawn mainly on the British Educational Research Association's (BERA) (2011) ethical guidelines for educational research and the code of ethics of the American Educational Research Association (2011), as well as referring to the British Psychological Society's (2009) code of ethics and conduct for this chapter. Since completing this book, a 4th edition of ethical guidelines has been published by BERA (2018), which has been updated and expanded to take account of the internationalization and globalization of educational research.

Throughout, I will be using the word 'participants' for those who agree to take part in our research studies rather than the demeaning but frequently used term 'subjects'. The British Psychological Society advised this change many years ago and now will not accept this word or gender discriminatory terms in their publications. I suggest that action researchers should use the same language to accord with the maxim in the published codes of conduct about respecting human dignity.

No matter which code of practice you look at, and I give several at the end of this chapter, they agree on three basic principles, but again, bearing in mind Ruth's comments, I accept that the last two are challenged in an action research paradigm:

1. (Voluntary) informed consent;
2. privacy and confidentiality;
3. protection from harm.

Principle 1: informed consent

This principle involves two equally important elements:

- 'consent', which means asking people to agree to take part in our research without any coercion, and
- 'informed', which means giving them sufficient information on which to make a realistic judgment on the possible consequences of taking part.

BERA's (2011) ethical guidelines add the adjective 'voluntary' to stress the importance of avoiding duress of any kind. There is also a special section for action researchers regarding this principle:

> Researchers engaged in action research must consider the extent to which their own reflective research impinges on others, for example in the case of the dual role of teacher and researcher and the impact on students and colleagues. Dual roles may also introduce explicit tensions in areas such as confidentiality and must be addressed accordingly.
>
> (p.5)

Consent from students

In pedagogical research, we tend to think of participants as students, but they can equally be our colleagues. When we carry out research on our own students' learning, we have to be careful of undue influence or coercion. Given our position as their teacher or person closely involved with supporting their learning, we have a certain amount of power and authority. In the Dr Jones scenario described in Chapter 6, we might think that she is using undue influence to get her students to take part in her interviews or questionnaire studies. They may find declining to participate difficult or embarrassing. In her experimental research looking at the effects of the electronic discussion forum, there is no option for students to decline as Dr Jones' intervention is designed as part of her course. This is an example of how pedagogical development that overlaps with pedagogical research creates its own ethical dilemmas.

We can encourage students to take part in our research believing, as we do, that there will be some pedagogical benefits. In making students aware of potential benefits of pedagogical research we have to be careful not to use our authority to coerce them or use our authority unfairly to convince them to take part. Consider the ethical issues in the following fictional scenario.

Voluntary informed consent: Jenny under pressure

Jenny is a senior lecturer who is the programme director for the BSc (Hons) in Midwifery Studies, which has been struggling with student satisfaction ratings. Jenny is feeling the pressure, particularly as she is expected by her university to publish one research article a year in a good quality health education journal. In an attempt to improve student ratings of the programme *and* to carry out a publishable research study, she decides to research the effects of student journals. When students are on placement with community midwives in their first term, Jenny will ask them to keep a regular journal. She plans to analyze students' journal records against academic performance measures and their programme evaluations at the end of the year. In her introductory lecture, she tells the new cohort of first years that she will be doing a research study on journal keeping during their placements. She also tells them that although they are free not to participate, she believes that journal-keeping will help them to better understand their own professional communication and interpersonal skills. Students who do not wish to take part are invited to leave their names in a box at the back of the lecture theatre. Jenny feels happy that she has given students the option to not take part. She is convinced that the journal-keeping exercise is pedagogically justified as it will improve her students' understanding of the importance of communication skills as well as their scientific and medical knowledge.

Activity

- Is this undue coercion?
- Has Jenny given her students enough information to enable them to have a good understanding of what taking part will involve?
- Is the fact that the students are first years right at the beginning of their university degree programme salient?
- Is Jenny unduly influenced by the university requirement to publish a research article?
- What actions might Jenny take to address these concerns?

As in Jenny's example, we might be so convinced of the benefits to our students that we unwittingly overpower them with justifications and make it very difficult for them to refuse. Even when we assure students that not taking part in our research will in no way affect the teaching or the quality of the learning they experience, there still remain other social penalties. For example, what sorts of pressure do we put on students if we want to administer a

questionnaire in class time and we say to them: 'Participation is entirely voluntary, so anyone who does not want to complete the questionnaire is free to leave now.'

Jenny is doing a very similar thing when she asks students to publicly 'refuse' to take part as well as asking them to identify themselves. There is plenty of research in social psychology to show how human beings are reluctant to flout authority or act in a non-conforming way, particularly when peer pressure is great. The reason we know so much about these powerful pressures which influence us to comply comes from the classic research experiments of Asch (1955) on conforming to group pressure and Milgram (1974) on obedience to authority. Paradoxically, both are nowadays cited as research studies which contravene many ethical principles.

Students are often asked to be participants in research because they are relatively easy to access, are inexpensive and there are large numbers of them in the same location. The fact that students, particularly psychology students, tend to be over-used in research puts additional pressure on us as pedagogical researchers as we cannot carry out our research without them. This means we have to be extra-vigilant about our enthusiasm and commitment to our learning and teaching initiatives leading to any element of coercion. This applies equally to involving staff colleagues in our research. The BERA (2011) guidelines make a particular statement about our responsibilities to participants:

> the participants in research may be the active or passive subjects of such processes as observation, inquiry, experiment or test. They may be collaborators or colleagues in the research process or they may simply be part of the context e.g. where students are part of the context but not the subjects of a teacher's research into his or her own professional practice
>
> (p.5)

To illustrate this in some detail I present a case study of some collaborative research I did asking my students to be co-researchers. I reflect on the ethical dimensions of this study in Appendix H.

Consent from staff

When our research is concerned with lecturers or learning support colleagues, the power/authority element does not have the same impact as it does on students unless it involves high-status staff and junior colleagues. In this case, the risk of coercion might be quite similar. I recall a year-long study where this power imbalance may have been a factor, when I invited five post-doctoral teaching fellows to take part in a mentoring initiative I had designed. In this work I deliberately blurred the boundaries of researcher with that of mentor to establish a relationship of trust. My aim was not only to produce research outcomes for us all but also to offer my pedagogical support to participants.

Instead of being a 'neutral' interviewer collecting data, I capitalized on my years of experience of working in learning and teaching to actively mentor these new academics by introducing SoTL concepts and approaches when it was appropriate. I did this in response to mentees' own issues/concerns that they raised spontaneously through emailed reflections which we then met to discuss on a regular basis. The initial findings were presented at the International Society for the Scholarship of Teaching and Learning (ISSOTL) Conference where my mentees were named as research partners (Norton et al., 2012). On reflection, even though the research had ethical approval from the Education Faculty ethics committee, I wonder if the post-doctoral fellows felt obliged to agree in the first place, or indeed to continue with this mentoring/research relationship over the course of a year.

There are other pressures to take part, such as research that might be exploring a departmental culture. Let us imagine that the researcher wants a rich phenomenographical portrait from all the staff who work within a specific department from the head to the graduate assistants. By declining to take part, individuals will readily become visible. This might not just disappoint the researcher who is not getting the full picture, but it might also cause ongoing irritation and resentment amongst other members of the department who have agreed to participate.

Information for informed consent

How can we be sure that we give fair information to potential participants about the study, and what form should that information take? It can be explained face to face in a lecture to students or on a one-to-one basis with your colleagues, but for most research studies it tends to be written in a participant information sheet. Participants are then asked to sign a consent form. For an example of a completed participant information sheet, see Appendix I and for a consent form template, see Appendix J.

Participant information tends to follow a similar pattern consisting of the following elements:

- **Statement and explanation about research aims, expected duration, description of what will be involved and what will happen to the findings.**

The aims of the study should be written in clear, non-specialist terms, and details about the input from the participants should be expressed as accurately as possible. I once received an angry email from a lecturer in another institution to tell me that completing the questionnaire I sent her took much longer than the 20 minutes I had estimated. We also need to be as clear as possible about how we will use the information they give us; a point I will return to in the section on privacy and confidentiality.

- **Description of any possible discomfort or risks and any possible benefits.**

It is quite difficult to judge this one, as we do not want to exaggerate the risks and frighten our participants. I have seen examples of this in some of the advice given to student researchers, where they are taught to tell their research volunteers that if the student's research causes emotional distress, they can be referred to the university counselling service. While this may be appropriate in some studies where sensitive issues are part of the study, there is a risk that if over-used such precautions might actually cause our participants to be fearful where there is no need. Similarly, with the possible benefits of taking part in the research, we have to be very honest, and avoid any exaggerated claims. This is particularly so with pedagogical action research where we are likely to be committed to our proposed intervention and personally convinced that it will enhance our students' learning – but it might not.

- **Disclosure of appropriate alternative procedures that might be advantageous to the participants.**

In an action research study to help students write better essays, the ethical issues of which are discussed in Norton (2008), I told my students that I was testing out three different types of written feedback to see which might be more useful. I also said that I would be randomly allocating them to one of these three feedback conditions. I was frank that I did not know which would be the most effective but if anyone taking part in the research felt they had not received the feedback they would have preferred, they could also have face-to-face individual feedback from me after the research study.

- **Statement that all information collected as part of the research study will be retained for xx years and details of where the information will be stored and the form in which it will be stored.**

This might be data in hard copy, electronically stored data or video/audio recordings.

- **Statement about steps taken to protect confidentiality.**

This is particularly tricky in pedagogical action research and will be discussed in the next section. If there is a difficulty, a statement should be included that makes our participants aware of this. My own university has a caveat on the research information sheet that states:

> *Please note that your confidentiality and anonymity cannot be assured if, during the research, it comes to light you are involved in illegal or harmful behaviours which I may disclose to the appropriate authorities.*

- **Statement about participation being voluntary and right to withdraw at any time.**

This should also include the right for participants to withdraw their data, but the timing could be problematic, if we are on the point of publishing, for example. I deal with this by making the cut-off point clear on the information sheet.

- **Details about how and when participants will be provided with either a copy of the final research report or summary of the research findings.**

This might be especially relevant and of interest to our participants if they are colleagues but in any case, is a matter of common courtesy to all.

- **Email or internet distribution arrangements.**

We should include a statement to the effect that we will take every care to remove any identification from the responses as soon as possible and that each individual's responses will be kept confidential by ourselves as the researcher/s and will not be identifiable in the publication of any findings. However, we also have to be honest and state that we cannot guarantee the confidentiality or anonymity of material transferred by email or the internet or by social media websites which are now widespread as research tools. A useful article exploring these specific ethical issues and making recommendations has been written by Moreno, Goniu, Moreno and Diekema (2013).

- **Use of experimental and control groups.**

In research that uses this type of methodology, we should include a statement that participants may be allocated to either a control or experimental group, and that they may not be told which of these groups they are in.

- **Collection of data on audio or video recordings.**

Participants should be made aware of the following:

  - Information will be audio-recorded. Participants should also be reminded of this before data is collected;
  - The recording or a certified transcript of the recording is raw data and will be securely retained for xx years;
  - Their identity can be masked if they request this.

Completing an information sheet should not encourage us to think that the informed consent process is complete; the American Educational Research

Association's (2011) code of ethics affirms that we should provide opportunities for participants to ask questions about the research either during or after their participation. This is particularly relevant in action research studies where the direction of the research might change. The British Psychological Society's (2009) code of ethics and conduct states that it may be necessary to obtain supplemental informed consent in such circumstances.

Principle 2: anonymity and confidentiality

Sometimes both researchers and participants confuse these two concepts. The BERA ethical guidelines use the term privacy to include both.

'Anonymity' means that the researcher/s will conceal the identity of the participants in all research findings (including research seminars, conference papers, journal papers, book chapters, blogs or other outputs). This can, however, be problematic with pedagogical action research if we plan to disseminate our research findings in the same institution where we carried out the research. This is quite likely, given that one of the aims of such research is to alter or inform existing practice in our practitioner context.

The term 'confidentiality' means making clear who has the right of access to the data provided by the participants. Usually, it is the researcher/s alone, but what exactly is it that we keep confidential? It is common, for example, in reporting on qualitative studies such as thematic analysis (discussed in Chapter 7) to use excerpts or quotes from interviews in reporting our findings. In such cases, while we can protect anonymity, we are not, strictly speaking, protecting a participant's confidentiality.

In the UK, we have to be cognisant of the implications of the Data Protection Act (Great Britain, 1998) which has, for example, changed the traditional way we used to publish students' examination results and coursework results, in lists on notice boards which were publicly available for all to view. This Act also affects how we publish such results in our research studies. In other countries there will be similar privacy laws, the details of which can be accessed via the internet.

The fundamental principles of anonymity – that individual participants will not be identified in any reporting of our study, and confidentiality – that their data are privileged to the researcher, are not quite as straightforward as they seem. There may be cases where we have to decide whether or not we should break that confidentiality. This might be research in which we discover frequent occurrences of cynical plagiarism among our student participants, or we uncover racism in marking practices in our fellow lecturers. In a way, these are the easier ethical dilemmas to deal with as they are overt and require a decision about what action we should take. BERA's ethical guidelines tackle this point in their section on disclosure (p.8) in which they advise researchers to think very carefully about disclosing illegal behaviour to the appropriate authorities, and that where possible, they should tell the participants of their intentions and the reasons why they must disclose this

information. Deciding what to do is rarely easy; consider the following fictionalized ethical dilemma.

Anonymity and confidentiality: the insider-researcher

Helen is a senior manager in the quality enhancement office of a large city university in the UK. Helen is currently carrying out a PhD in the area of staff perceptions of quality enhancement processes. Her research involves a number of in-depth interviews with staff at different levels throughout the university. As someone who is well known by many of the colleagues she interviews, Helen is sometimes told information that is not part of her research. A recent troubling example was when a junior member of the Veterinary Medicine School told her that in the previous year all the final year grades had been artificially increased after the external examiner had seen them, as the school had been identified as underperforming in terms of students' final degree classifications.

Question: what do you think Helen should do?

Covert breaches of confidentiality can also be a problem. For example, when I publish my research and name myself as author, I am immediately giving away, without even deliberately doing so, information about my institution, colleagues and students. In pedagogical action research, the methodology is often qualitative, where we are actually looking to include all the rich contextual detail in our interpretation, so it becomes very difficult to ensure our participants' privacy. A similar caveat arises when a participant's identity may be inferred because of the unique role they hold within an organization.

In most cases, though, anonymity is usually fairly easy to preserve. It is standard practice to use pseudonyms for excerpts from interview transcripts, but again care has to be taken, if we want to give some basic descriptive information about our interviewee. An example that I remember is taken from a research study that was carried out as part of a collaborative UK government funded project called Assessment Plus: www.writenow.ac.uk/assessmentplus/. The study involved carrying out research interviews with lecturers from three universities about their views on marking (Harrington et al., 2006). When reporting excerpts from their interviews, we were keen to provide some descriptive information about our participants, such as the length of teaching experience that they had but this made it relatively easy to work out who some interviewees were, such as the part-time hourly paid assistant who had less than six months or the Reader (Associate Professor) who had over twenty years. Perhaps what we should have done was to have fictionalized some of the other details about our participants as a disguise to protect them from being identified by deduction.

Whenever possible, it is a good idea to collect information without names or unique identifiers attached to the data or known to the researcher. When this is not possible because we need to re-contact participants for follow-up information or for a further phase of research, we can devise a strategy such as using codes for names. Student identification numbers are sometimes used in this way. If this is not possible, we can ensure that names are removed from the records as soon as all the data are collated. In some cases where video or audio recordings are used, we must ensure these are stored safely and cannot be accessed by colleagues who are not part of the research team.

In some pedagogical action research studies, particularly those that are collaborative, students become co-researchers, so it is only natural and right that they receive credit and acknowledgment of their efforts (see Appendix H). While this compromises their confidentiality and anonymity rights, the benefits may well outweigh the disadvantages. Interestingly, Grinyer (2004) has argued that we make assumptions that anonymity is always desirable, yet some research participants would prefer their own names to be used rather than pseudonyms as it gives them some ownership of their information. Ruth Balogh makes a similar point:

> There are some really collaborative projects between teachers and learners where the learners are co-authors of the published work. Instead of remaining anonymous providers of data, they are regarded as co-producers of knowledge. This is fundamental to the democratizing impulse of action research – doing research 'with' not 'on' people. See Beatty's paper authored with 13 students and teachers for an example of such a 'collective interpretive record' (Beatty et al., 2008).
>
> (Balogh, personal communication, March 2018)

Finally, in the 21st century technology is breaking down privacy, in ways we still do not fully understand, such as wikis, blogs and social networking, all of which are fields of interest to the pedagogical researcher. Townsend and Wallace (2016) have produced a set of ethical guidelines on how to use social media in research by which they mean any online data but they exclude email. They highlight the key issue of whether such data should be considered as public or private. This has implications for informed consent, as often a social media user's data can be accessed for research purposes without their awareness that this is being done. Their framework is useful and gives a number of case studies to illustrate ethical dilemmas with proposed solutions. I give details of their publication at the end of this chapter.

Principle 3: protection from harm

Protecting our participants from harm in pedagogical research is not likely to be about physical harm, as might potentially be the case with some medical

research. It could, however, be about psychological harm, such as effects on self-esteem and academic confidence. Unpalatable as it is, we must acknowledge that pedagogical research on students could potentially harm their learning and academic performance, although this is likely to be relatively minor. Is it appropriate, for example, to use class time for research, which has no direct pedagogical benefits to the students themselves? What about the instances when we might ask them to give up to an hour of their time, which they might have set aside for study, to take part in focus groups which again, are unlikely to benefit them directly?

Points to ponder

Would any of the following action research studies potentially 'harm' your students?

- a simple evaluation of your teaching initiative using an online survey tool;
- a collaborative project in which some students are invited to become co-researchers;
- a student focus group that is convened to discuss academic engagement;
- an analysis of student records of lecture attendance compared with their academic performance.

Throughout this book, I have argued that the purpose of pedagogical action research is to carry out systematic research enquiry in order to discover something that will enhance our students' learning experience. This seems a morally justifiable and praiseworthy stance. Yet in seeking to improve their learning experience, we are actually intruding on that very learning experience by the research we do. We have to recognize that there is an inevitable tension between researching students' learning with the goal of improving it, while at the same time actually interfering with that learning with no guarantees that their learning will improve. Ruth Balogh observes:

> On the other hand, many action researchers would argue that action research systematises enquiry that would otherwise take place just by one's own pondering. One cannot help intruding; enquiry is always taking place! That's the nature of teaching and learning. To formalise enquiry is to be more democratic and open.
>
> (Balogh, personal communication, March, 2018)

Even when we choose to rely totally on non-intrusive investigations such as correlational research on naturally produced and available data, we may be dealing with issues of confidentiality, which might relate to students, to subjects or departments and to the institutions in which we are carrying out this research. Publishing such results might by deduction, harm the reputation of our students, colleagues or

institutions. Imagine, for example, a correlation study where we found that the number of face-to-face class contact hours was strongly related to improved academic performance. The implications of such findings could potentially damage the reputation of those subjects that traditionally have low contact hours such as arts and humanities, and social sciences, as opposed to those that traditionally have high contact hours such as the sciences and vocational degrees.

The pedagogical action research context

Having sounded all these cautions, I do not think that the pedagogical action researcher should be put off introducing and researching innovation in the learning environment.

In my view, pedagogical action research is a particular kind of research which establishes efficacy in a practice-focused way that is guided by our pedagogical beliefs and moral purposes. For this reason alone, it is worth wrestling with the ethical issues that inevitably arise.

In a book chapter that I wrote on ethical issues facing the practitioner-researcher in higher education (Norton, 2008), I suggested that it is the responsibility of the educational researcher to think ethically rather than merely go through an institutional ethics procedure. What I meant by this was that it can sometimes be an almost formulaic process to go through the steps of gaining permission from an ethics committee. As I hope I have illustrated above, many of the statements we make about informed consent, confidentiality and protection from harm actually have complex implications and in the end, it comes down to a moral responsibility and integrity. This is what Hammersley and Traianou (2012) refer to as 'the situated nature of judgment' where research ethics is considering what the most sensible thing to do is in a given context. In other words it is taking responsibility for ethical decisions by acting with integrity. Macfarlane (2009) states that there is often an undue concentration on the negative which means that institutional committees are likely to concentrate on avoiding the unethical but that it is our responsibility to go beyond the rules and regulations by *being* ethical in our research.

The politics of pedagogical action research

Up until now, most of my discussion has focused on the ethical implications of carrying out pedagogical action research involving either students or staff colleagues as participants. I want to turn my attention to a wider ethical issue: the politics of action research. Basically I use this term to mean that pedagogical action research has implications beyond my own professional practice at the micro level. I believe that pedagogical action researchers should seek to challenge established pedagogical practice at the meso level of the department and discipline or field and at the macro level of the institution and the HE sector generally (see Chapter 1).

Pedagogical action research has emerged from a broader field of educational action research and specifically the teacher-researcher model as advocated by Carr and Kemmis (1986). Kemmis (1993) has subsequently made some interesting comments about how action research can be a force for social change, but, he says, it depends on the choices we make:

> Our task as educational researchers involves us in taking concrete and explicit steps towards changing the theory, policy and practice of educational research, as well as participating in the work of changing educational theory, educational policy and educational practice more broadly.
>
> (Kemmis, 1993, p.5)

What he was referring to here is how the different facets of action research can be seen as working at the micr -level which might be about the here and now of the researcher-teacher or at the macro level which might be about large-scale policy research. In Kemmis' view, critical action research is connected to social change; it is about trying to understand and improve the way things are. Research itself is, he argues, a social practice which, like other social practices, contributes to and serves bureaucracy such as disciplinary fields. Researchers can, however, influence and change bureaucracy and the status quo by making different decisions about how they will participate in various research studies and on whose behalf. For Kemmis, making the connection between social research and social action is achieved by making connections with different people in the service of different interests. For pedagogical action researchers, this might be with educational administrators and policy makers as well as with students and fellow teachers. The point is picked up by both Carr and Kemmis (2005) who, in an article reflecting on their book nearly twenty years later, say how important it is to stay critical in the postmodern world, where social inequality worsens and research becomes increasingly restricted.

Noffke (2009) suggests that we understand action research in terms of the professional, the personal and the political dimensions. In respect of the political purpose for action research in education, there have been a number of different approaches, such as the desire to create more democratic processes in schools but there are also different political paths such as the desire to use action research to redress social inequalities, inspired by writers such as Paolo Freire in the 1970s. A social justice agenda is still critical today and will involve action researchers in working with all kinds of oppressed or marginalized people. In higher education an action research approach might be instrumental in 'transforming' learning with pedagogy being part of a change process (Osman and Hornsby, 2017).

If we take this view seriously, then as a pedagogical action researcher we may find ourselves with divided loyalties. What, for example, do we do if our research findings show unacceptable bad practice within a department in our university,

such as marginalizing LGBT (Lesbian, Gay, Bisexual and Transgender) students? Carrying out pedagogical action research to change policy at the macro level might put our own institution or colleagues in certain subjects such as the humanities at risk. Suppose, for example, our research was used by government bodies to privilege the current emphasis on science and employability skills. It is important to remember that once we have published our research, we no longer have any say in how our reported findings might be interpreted, studied or reported in other publications. Once it is in the public domain, our research can be misunderstood or misappropriated, so sometimes thinking ethically means carrying out more research and writing more publications to influence policy making at the macro level.

Overall summary

Acting ethically involves making some careful and considered decisions at the research design stage, as well as in seeking formal ethical approval from our relevant institutional bodies. However, much of the standard advice given in the various codes of practice poses its own particular problems in pedagogical action research. This is because action research is a form of 'insider' research, where the researcher/practitioner has a dual role (Mercer, 2007). Throughout the entire research process, we need to be aware of these and other ethical issues that are specific to pedagogical action research.

Synopsis

- In this chapter I have discussed ethical issues in carrying out educational research from the perspective of the pedagogical action researcher.
- I have argued that the dual role of practitioner and researcher leads us to making decisions not purely on research grounds but equally on pedagogical outcomes, indeed this is the very cornerstone of pedagogical action research.
- In the section on fundamental principles, I have described informed consent, anonymity and confidentiality and protection from harm, considering how these principles can raise ethical issues that are particularly problematic in pedagogical research.
- In the section on the pedagogical action research context, I have briefly discussed its political aspect and ethical implications.
- Throughout the chapter I have argued for an approach to ethics which is robust and morally driven rather than one that just conforms to published codes of practice, or institutional processes.
- Finally, I describe in Appendix H a case study of an action research study, co-authored by students, and I reflect on the ethical issues raised by this study as a way of illustrating some of the difficult dilemmas which face us.

Further reading and resources

Codes of Practice

This list of codes is not exhaustive but will provide you with a sense of the commonly agreed ethical principles for carrying out research. It is also important to check that you are using the latest code as they tend to be updated every few years.

American Educational Research Association (2011) *Code of Ethics*. Online. Available at: www.aera.net/Portals/38/docs/About_AERA/CodeOfEthics(1).pdf (accessed 29 March 2018).

American Psychological Association (2017) *Ethical Principles of Psychologists and Code of Conduct*. Online. Available at: www.apa.org/ethics/code/ethics-code-2017.pdf (accessed 29 March 2018).

American Sociological Association (2017) *Code of Ethics. Proposed Revision*. Online. Available at: www.asanet.org/sites/default/files/code_of_ethics_proposed_2018_revision.pdf (accessed 29 March 2018).

Australian Association for Research in Education (1993) *AARE Code of Ethics*. Online. Available at: www.aare.edu.au/pages/aare-code-of-ethics.html (accessed 29 March 2018).

British Educational Research Association (BERA) (2011) Ethical guidelines for educational research. Online. Available at: www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2011 (accessed 29 March 2018)

British Educational Research Association (BERA). (2018) Ethical Guidelines for Educational Research, 4th editionOnline. Available at: www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2018 (accessed 26 June 2018).

British Psychological Society (2014) *Code of Human Research Ethics* (2nd edn). Online. Available at: www.bps.org.uk/news-and-policy/bps-code-human-research-ethics-2nd-edition-2014 (accessed 29 March 2018).

British Sociological Association (2017) *BSA Statement of ethical practice*. Online. Available at: www.britsoc.co.uk/media/24310/bsa_statement_of_ethical_practice.pdf (accessed 29 March 2018).

Books

Brooks, R., te Riele, K. and Maguire, M. (2014) *Ethics and Education Research*, Sage Publications Ltd.

Eynon, R., Schroeder, R. and Fry, J. (2016) The Ethics of Learning and Technology Research. *The SAGE Handbook of E-learning Research*, Sage Publications Ltd.

Journal papers

Banegas, D.L. and Villacañas de Castro, L.S. (2015) 'A look at ethical issues in action research in education', *Argentinian Journal of Applied Linguistics*, 3 (1): 58–67.

Social media research ethics

Townsend, L. and Wallace, C. (2016) *Social Media Research: A Guide to Ethics*. Available at: www.gla.ac.uk/media/media_487729_en.pdf (accessed 29 March 2018).

Internet resource

Hack, C. (2015) Does pedagogic research require ethical review? [Blog] Online. Available at: www.heacademy.ac.uk/does-pedagogic-research-require-ethical-review (accessed 29 March 2018).

Chapter 11

Going public

How can you grow the influence of your findings?

In this final chapter, we have reached the stage of disseminating our findings. This has been described by the Scholarship of Teaching and Learning (SoTL) movement as 'going public'. Going public is the only way that your action research findings will have any impact or influence beyond your own practitioner context. No matter how good your action research study is, it will perish unless you can disseminate it as widely as possible. Going public is vital as it opens up your research to peer scrutiny. It is this process that distinguishes pedagogical action research from introspective, reflective practice or from curriculum development.

Pedagogical action research is in a unique position when it comes to dissemination, as it is research that has a dual aim. It informs policy making and adapts existing practice, as well as contributing to new knowledge making. This will affect your decisions about where and how to share your findings. In the first part of the chapter, I will discuss the options for publication that are available, by using a fictional case study. In the second part, I will suggest how to go about seeking funding to further your action research. In this respect, research publications are significant evidence of a track record that will help you in the process of bidding for funding, whether internal or external.

PART 1. DISSEMINATION

Although the purpose for which you carried out your study will largely determine where you choose to disseminate your findings, it is a sound principle to try and report them as widely as possible. This will inevitably mean adopting different formats; a conference paper is different to a publication in a journal, which will in turn be different from a report in a professional body's magazine or newsletter. The more outlets you can use the more effect your research will have. Figure 11.1 is a simple decision chart to aid your thinking about the purpose and range of your pedagogical research.

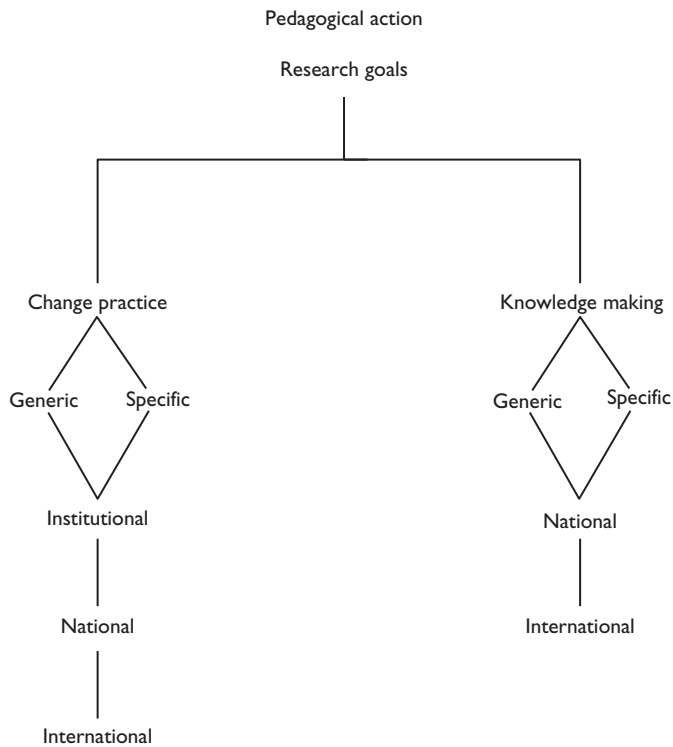

Figure 11.1 Decision chart for deciding on appropriate methods of disseminating an action research project

Looking at this chart, there are several different dissemination methods that you can try, for instance:

- **Changing/influencing subject-specific practice within your institution**

Consider giving a presentation of your research to the department, school or faculty. You might also think about circulating a written report, hard or electronic, although this will not necessarily be read unless you give a presentation to engender some interest. A more informal approach can be a chat over a cup of coffee particularly with those who have influence in your faculty. This can be surprisingly effective.

- **Disseminating subject-specific findings at national and international level**

Consider presentations, reports and/or workshops via your subject professional body which tends to be national. For instance in the UK, some examples include:

- The British Psychological Society: www.bps.org.uk/
- The British Association of Social Workers: www.basw.co.uk/
- The Association for the Study of Medical Education (ASME): www.asme.org.uk/
- The Law Society: www.lawsociety.org.uk/

More specifically there are associations concerned with education within their subject or professional sphere which are frequently international, for example:

- The European Society for Engineering Education, known as SEFI: www.sefi.be/
- The International Teaching of Psychology Network, known as Inter-TOP: www.interteachpsy.org/Main/HomePage

Many of these will offer conferences and other events which can be ideal locations to present your research findings and further your thinking. Another alternative is to consider publishing in subject practice-based journals, some of which are fairly well established in the journal rankings such as the *Journal of Geography in Higher Education*, www.tandfonline.com/toc/cjgh20/current.

In my own discipline we have several journals such as:

- *Psychology Teaching Review*: www1.bps.org.uk/publications/member-network-publications/member-publications/psychology-teaching-review
- *Psychology Learning and Teaching*: www.uk.sagepub.com/en-gb/eur/journal/psychology-learning-teaching
- *Scholarship of Teaching and Learning in Psychology*: www.apa.org/pubs/journals/stl/
- *Teaching of Psychology*: www.journals.sagepub.com/home/top

- **Changing generic practice and informing policy making at institutional level**

This could be initiated by giving presentations as well as reports to the institutional senior management team or to the academic committee or any other similar committee that has responsibility for learning and teaching within your institution. Some institutions have webpages devoted to learning and teaching, so persuade the keeper of the webpage to put up your action research study. Other avenues include the learning and teaching events that your institution runs, some of which are related to an institutional in-house journal or newsletter.

Many universities, including my own, have communities of practice related to pedagogy. Presenting at these networks would be a good starting point to instigate

change. In 2001, I established a pedagogical action research (PAR) group, designed to encourage colleagues who were not expert researchers to carry out research studies in their own teaching contexts. The group was inter-disciplinary, grassroots and during its ten-year lifetime, its work led to an annual Pedagogical Action Research (PAR) symposium and eventually to an international bi-annual conference called the Pedagogical Research in Higher Education (PRHE) conference, and an in-house journal called *PRIME* (Pedagogical Research in Maximizing Education). The outcomes and impact of this community of practice are fully described in Norton and Owens (2013) and Norton (2014c). In these publications I showed how a small beginning can lead to a substantial influence, but that it takes time. My reflections on this initiative have taught me not to be too impatient. There were times when I thought all we did at meetings was talk but no research seemed to get started. Looking back I now appreciate that the process takes a lot of discussion to encourage colleagues to carry out pedagogical research themselves, but it was worth it. The value of the process is illustrated in these two quotes taken from an evaluation of the PAR group:

> Without involvement with PAR and the spur and support that it has offered, I'm doubtful I would have commenced the research, particularly having had very little direct involvement in publishing/presenting HE research. [Lecturer].
>
> As a new academic feeling intimidated by the demands of research/publication activities, the PAR group offered an egalitarian forum where those with little experience felt able to contribute, whilst benefiting from the advice and encouragement of more experienced members. [Writing specialist].
>
> (Norton and Owens, 2013, p.296)

- **Disseminating generic practice at national and international level**

This would include presenting at one of the many national/international learning and teaching conferences. Most of these associations also hold conferences and other events for early career or emerging researchers. The list is huge but some that I have presented at and would recommend include conferences of the:

- European Association for Research on Learning and Instruction (EARLI); a biennial conference: www.earli.org/
- International Society for the Scholarship of Teaching & Learning (ISSOTL): www.issotl.com/issotl15/node/28
- European Educational Research Association (EERA): www.eera-ecer.de
- Society for Research into Higher Education (SRHE): www.srhe.ac.uk/

For other related conferences it might be worth looking at the conference alerts services. The one I have used is CONAL which I give details of at the end of this chapter. As well as these broadly based educational conferences there are others that

focus on specific aspects of teaching and learning such as e-learning; again there are countless examples but one that seems to be well established, although I have no personal knowledge of it, is the e-Learning and Innovative Pedagogies Research network, founded in 2006 and based in the USA: www.ubi-learn.com/about. If you are interested specifically in assessment issues then a conference that I have found welcoming and supportive for newer researchers is the International Assessment for Higher Education conference based in the UK www.aheconference.com/

- **Disseminating for knowledge making (generic and subject-specific)**

Many of the approaches described above would apply but given that theoretical and conceptual knowledge needs to be presented in some written format for readers to reflect on in depth, journal articles and/or book chapters might be more suitable. In this next section I will describe some of the more common methods of dissemination using the following fictional vignette.

The case of Maureen and Mike: the wiki enthusiasts

Dr Maureen Lombard is the newest lecturer to be appointed to the School of Mathematics and Statistics in a traditional redbrick university, working in the department of Applied Statistics. She is on a fixed-term three-year contract and has just successfully finished her higher education teaching certificate The department is large, consisting of more than 40 academics, most of whom have been in post for ten or more years. The department is proud of its last Research Excellence Framework (REF) rating which was judged to be four star, meaning quality that is world-leading in terms of its originality, significance and rigour. The department is also proud that the Royal Statistical Society accredits its undergraduate programme.

Maureen is responsible for a second-year optional module called 'Statistical reasoning and philosophy'. Enthused by her experience on the teaching certificate programme, she decided to incorporate a wiki project to replace the traditional assessment. She sought the help of one of the postgraduate assistants, Mike Mantoni, who was in the last stages of completing his PhD and who was keen on developing technology to facilitate learning basic statistical concepts. Together they designed an action research project to see if setting up a wiki as a group project space would enhance students' critical thinking skills about statistics.

Students were asked to use the wiki page to discuss causality and statistics as a group-assessed project. They were required to write consecutive drafts of their thinking, exchange opinions on each other's drafts and publish their

final agreed version on the wiki. Maureen and Mike analyzed each draft for evidence of progression in critical thinking and sent the final version to a national leader in statistics and philosophy for an objective appraisal. To their delight, his report stated that in his view the evidence of thinking exhibited was at postgraduate level.

A further unexpected bonus was that the students were so enthusiastic about this way of learning that they wanted to establish a wiki for the whole department, which would have contributions from both the staff and the students to develop a glossary of statistical terms and concepts. This would form a second cycle of action research.

Maureen and Mike were keen to take this idea forward but the head of the department, Professor Roe, advised Maureen that in terms of her career path she would be better concentrating on maintaining a track record of REF-assessable publications in her subject rather than, as he put it, 'be diverted by pedagogical research'.

Nevertheless, Maureen has decided to pursue the action research study as she believes in the value of this work.

This scenario has a number of crucial factors in it.
On the positive side:

- it is a good pedagogical idea using inexpensive technology;
- the action research findings suggest evidence of efficacy;
- there is an external positive report from a nationally recognized expert in the field;
- student feedback has been enthusiastic;
- there is evidence of a good level of student engagement, which is a strong indicator for further development.

On the negative side:

- Maureen and Mike work in a traditional department where most of the staff have many years teaching experience, so may be reluctant to change their approaches;
- the department is very proud of the fact that its undergraduate programme is accredited by the Royal Statistical Society, so any proposed changes in curriculum may prove difficult to get approved;
- the department has a strong research reputation, which does not include pedagogical research;

- Professor Roe has given a clear signal to Maureen to concentrate on her subject research, a particularly significant pointer, as she is on a fixed-term contract.

I have written this scenario to represent a common situation in universities today. Unfortunately, pedagogical research is frequently seen as less important than subject research. Similarly, teaching itself is often regarded as less prestigious than doing research (Blackmore, Blackwell and Edmondson, 2016). This is a regrettable state of affairs and one that I oppose. Nevertheless, if we are to promote the cause of pedagogical research it is important to be aware of some of the obstacles that face us, so we can be better prepared to deal with them.

In presenting this fictionalized vignette, I hope to illustrate how different ways of disseminating a pedagogical action research study might help you to progress your work despite some of these obstacles.

Changing/influencing subject-specific practice within your institution

One of the goals of pedagogical action research is to have an immediate effect on practice, so given that Maureen and Mike's research findings have shown some benefit to student learning, then it may be an approach that their colleagues might try. A good first step would be for Maureen and Mike to have a few informal chats with those colleagues who they know are interested in technology-enhanced teaching. They might persuade one or two individuals to join the action research study. One of the characteristics of action research is that it is collaborative, and it only takes a small number of extra colleagues to grow an action research study and increase its scope and influence. This would then enable Maureen and Mike to further the research by seeking some external funding to support it. Even if they were not successful in getting colleagues' active involvement, they have prepared the ground for the next step, which is presenting their findings at a departmental meeting – a further opportunity to look for some support.

Different institutions have their own organizational structures but in Maureen and Mike's case, they would need to ask Professor Roe, as head of the department of applied statistics, if they could give a brief presentation on their findings at one of his regular departmental meetings. This can be a very effective way of finding out in a more formal setting what the consensus reaction is to their initiative.

Departments, schools and faculties are powerful organizations, the nature of which are described by Becher and Trowler (2001), who use the term 'academic tribes' to capture their essence (see Chapter 1). Since Maureen is the newest member of the applied statistics 'tribe' and Mike is yet to be considered a full member, they may have an uphill battle to change the prevailing culture. However, by presenting their findings formally to their colleagues, they are at

the very worst keeping them informed and at best, they might persuade a few colleagues to contribute to their wiki initiative.

Changing generic practice and informing policy making at institutional level

It is perfectly possible, of course, that Maureen and Mike do not get the sort of interest they were hoping for, but they may still be able to develop their idea from an inter-disciplinary perspective. This would involve them giving some sort of research presentation at an institutional learning and teaching event.

The longer I have been involved in pedagogical action research and academic development, the more I realize that while subject and discipline differences are crucial, there are more commonalities than one might at first suspect. Pedagogical issues of student engagement, widening participation, assessment, employability, skills development, critical thinking, group teaching and technology-enhanced learning have their own subject context but raise common areas of concern. This is why it can be an effective strategy to give a research presentation on your study at an institutional level.

Universities have different arrangements, but many have learning and teaching related events, such as learning and teaching days, internal learning and teaching conferences. Most have some sort of academic/staff development unit, which may organize events for continuing professional development in learning and teaching. Institutional events such as these would be an ideal venue to publicize your action research and interest colleagues in becoming research collaborators to develop the pedagogical project in different disciplines and contexts.

In Maureen and Mike's case we will assume their university has an annual learning and teaching weekend organized by the Centre for Academic Staff Development and Human Resources. By promoting their research findings at this event, or better still, running a workshop where participants can actively contribute, they are likely to get involvement from colleagues in other subjects who are interested in the pedagogical potential of technology-enhanced active learning.

The most common mistake with running a workshop is that presenters use it as an alternative to a research presentation. This is not the purpose of a workshop, which should be about getting your participants involved. In Maureen and Mike's case they may want to briefly talk about their initiative and why they think the idea of using a wiki in their course will be worth developing by others. Ideally they should demonstrate what has been done so far and allow the workshop participants to have hands-on experience of seeing how this tool can be developed.

The workshop might also include opportunities for the participants to generate ideas for action research projects to explore the benefits of a statistics wiki

for students in disciplines where statistics is part of the course such as geography, agriculture, biology, medicine, for example. It may be that this has the effect of somewhat changing the direction of Maureen and Mike's original research study by not confining it to statistics students. This would mean a much larger scope, but at the same time it would lose the focus of their original subject-specific pedagogical issue.

Disseminating subject-specific findings at national and international level

As well as impacting on practice at the institutional level, you may want to broaden the reach of your research. This may be to change practice, or to contribute to new knowledge, or, as is common in pedagogical action research, to be a combination of both.

There are many different dissemination outlets such as newsletters, online dissemination blogs (see for example 'The BERA Blog. Research Matters' www.bera.ac.uk/about-this-blog), books which can be edited or single-authored and book chapters. I am going to concentrate on two that I think are the most influential: disseminating at conferences and disseminating through journal publications.

Conference dissemination

Conferences are invaluable opportunities for networking, inspiration and encouragement. Conferences also help you to become recognized in scholarly communities and get to know other scholars in your field. Some conferences specifically encourage early career or emerging researchers. Presenting at conferences can take many forms depending on the conference itself. Many offer a variety of presentation formats other than the traditional research paper. These may include posters, panel discussions, symposia, roundtables, workshops and video workshops, and PechaKucha (PowerPoint presentations consisting of 20 slides which each last 20 seconds). Which format you choose will depend largely on what you hope to achieve, but I am going to concentrate on just two: the research paper and the poster.

Giving a conference research paper

Depending on the conference, you may be allowed anything from 10 minutes to 30 minutes or more to deliver your paper, but always you will be expected to include time for questions within your allocated time slot. Usually your paper will be allocated to a session with two or three other papers, hopefully but not always on a similar theme.

There are two main benefits of giving a conference research paper:

1. If your ultimate aim is a journal paper, presenting your findings at a conference first will give you some valuable peer feedback which will help you develop your paper.
2. Writing for publication in a journal usually has no deadline attached to it, unless it is a special issue. This means that your writing commitments can get pushed to the bottom of the pile because of the heavy demands of academic work. Giving a conference paper, however, does have a deadline attached to it, so is a powerful motivator for you to make progress on disseminating your findings. Some conferences require a written paper to be submitted but many do not. It is, however, always a good idea to have a written version of your conference paper with your contact details to use as a handout in your session. Extra copies left on the conference reception desk will enable your research to reach a wider audience. Doing this means you are three-quarters of the way in getting your paper submitted to a journal, or having it published in the conference proceedings, if this is offered. If you are concerned about some of your work being used by others while it is still in draft form, it is a good idea to have a header that says something like 'Draft copy only. Not to be cited without the author's permission.'

If you have never presented a pedagogical paper before, you may feel more comfortable in the first instance in choosing a subject-specific event. Since Maureen and Mike are relatively inexperienced in the field of pedagogical research, they could aim for a conference on maths teaching hosted at a university, which would be sizeable enough to give them a good networking experience with fellow maths teachers but not so large as to be totally overwhelming.

If you prefer to give your paper at one of the generic learning and teaching conferences, there are many to choose from, ranging from national to international. See further resources at the end of this chapter for some of the best known ones.

Getting your conference paper abstract accepted

Depending on the status and reputation of the conference, there will be different acceptance rates. Generally speaking, the bigger international conferences will have more stringent criteria than the smaller conferences. In all cases though, there are a number of steps you can take to give yourself the best chance of having your conference paper proposal accepted.

Step one: Plan ahead

Although this is a counsel of perfection, it really does pay well to think about where you are going to present your findings at the starting point of designing your action research project. This is why a research protocol is such a useful

'map' as it has a section on disseminating your findings and will get you thinking about this very important endpoint before you begin (see Chapter 6).

If you do not think this through first, and in reality this happens to a number of us, you may find that the deadline for submitting your proposals comes before you have analyzed your data. If you do not have data already collected, the conference committee is taking a chance on whether you will have anything to report by the time of the conference. Sending in premature proposals is, therefore, one of the most frequent reasons for having your submission rejected. An illustration of this is shown in the appendices, where I have included an example of an abstract of mine that was rejected for an international learning and teaching research conference (see Appendix K) and an abstract that was successful for the same conference two years later (see Appendix L).

Knowing which conference you are aiming for at the design stage of your study and when the deadline for submission is, will avoid this potential pitfall.

Step two: Writing a good conference abstract

There are really two audiences for your conference abstract: firstly the conference reviewing committee, who will accept or reject your proposal and, secondly, if it is accepted, the conference delegates, who will choose whether or not to hear your presentation. I will take each of these in turn.

1. *Writing your abstract for the conference reviewing committee*

Reviewers will usually review your abstract blind, which means in a very limited space (typically about 300 words) you have to make a good case for why your proposal should be accepted, rather than relying on your name or your reputation. Your abstract, therefore, needs to summarize your key contributions in terms of what is new, different and, most crucially, *applicable* about your work to the conference themes.

Sometimes you are asked to structure your abstract according to given headings. This is likely to be the case for conferences where you are asked to submit an extended summary (typically about 1000 words) as well as an abstract. Even if you are not asked to do this, it is a good idea to have the following in mind when writing your abstract:

Title: This should provide a clear indication of what your research is about. If possible, the title should show how the study connects to the conference themes.

Aims: Tell the reviewers the purpose of your research, and make sure you set it in a theoretical/theoretical literature review context. All research, including action research, builds on research that has gone on before and you need to demonstrate this.

Methodology/research design: Depending on the conference, reviewers may be looking for evidence of a substantial research project, which might

mean large samples or inter-institutional research, or depth of analysis. This is generally the case if you are aiming at a large international, research-intensive conference. For practitioner conferences, you are unlikely to need to present such large-scale research, but that does not mean you should be any the less rigorous. In pedagogical action research, I believe that we need to get away from what are sometimes known as 'show and tell presentations' and present studies that are carefully designed (see Chapter 6). Evidence of rigour in your research design is likely to be viewed positively.

Research findings: You may not have completed the analysis of your findings when you have to submit your abstract, but the further on you are the better. The more detail you can give about your proposed analysis on already collected data, the more likely your abstract will be accepted. See the lessons I learned in Appendices K and L.

Theoretical and/or educational significance of the research: This is a good place to explicitly refer to the theme/s of the conference, in terms of the implications of your findings. It also relates to the aim of contributing to new knowledge which might be conceptual, empirical or practical.

References: It is helpful to include a small number of key references to demonstrate you know the field, but do not include a lengthy list, as space is precious. It is safer to include your references in the word count if you are not sure, but you might want to check this with the conference reviewers.

Finally, it sounds obvious but make sure you scrupulously follow all the instructions for submitting your abstract, including meeting the deadline for submission and not exceeding the word allowance. If the conference organizers have not announced a notification date, you should contact them to find out when to expect a reply. If you do not hear from them by the specified date, you must get in touch with them immediately. It is a rare occurrence, but sometimes abstracts can go missing (it happened to me), so you should not assume that because you have not heard anything your abstract has not been accepted.

2. *Rewriting your abstract for the conference delegates*

Once your abstract has been accepted some conference organizers give you the opportunity to modify your abstract for the conference programme. Usually, the timescale for this is quite tight. It is well worth doing because no matter how good your research, if nobody comes to listen to your presentation your efforts will be wasted. Although I have never had a complete 'no show', I have had the somewhat dispiriting experience of only two or three in the audience. I have also had a packed room dwindle to a handful after the 'superstar' whom I was following has given their paper and left. Usually, organizers arrange three papers together in a time slot of about an hour and a half, so instead of staying to hear all three presentations, attendees often just come for the one paper they want to hear and then go

off to another parallel session. This can be quite disconcerting, but forewarned is forearmed and it happens to all of us.

Rewriting your title: If it is possible, try and make your title appealing, so that people will want to hear what you have to say. Avoid titles that are too long, as they can appear dreary. Equally, be careful of the too-short title, that might be snappy but does not give any information on what your research is about. Some of the more successful titles have the catchy part in the first clause and then a subtitle. Here is an example from the 8th European Music Analysis Conference (EuroMAC): 'It's analysis Jim, but not as we know it: Teaching Analysis without Notation to a Class of Undergraduates with Radical Subject-Specific Diversity' (Jarman-Ivens, 2014).

Potential audience: It also helps if you think about your potential audience and show in your abstract how your research will be of particular interest to them. Although not many conferences specify this, it is a useful mental reminder to think through what your audience will gain by coming to listen to your paper, for example:

By the end of our research paper, delegates will:

1. . . . . .
2. . . . . .
3. . . . . .

If you are submitting a proposal for a workshop or other event where delegate participation is involved, you will be required to list what they will get out of it.

Presenting a conference poster

Many conferences have sessions for posters in their programmes and you may want to consider this as an alternative to a research paper. Generally speaking, you will be asked to submit a poster proposal abstract, so the above principles for research paper proposals apply equally to this type of submission. Occasionally, you may have your research paper proposal rejected but be offered a poster presentation instead. Naturally, this is a disappointing outcome but rather than dismissing it out of hand, it is in fact a good opportunity to get your research disseminated. You can seize this chance by preparing a written paper to go with your poster to give to delegates who are interested in your research.

Posters offer different advantages to formal research presentations by enabling the presenters and the audience to talk with each other much less formally, so they can be a very useful way of getting feedback on your developing work. Typically, there will be an exhibition area in which each presenter is provided with a freestanding bulletin board on which to display his or her poster. Sizes vary, so it is important to check with the conference organizers what size your poster should be.

A certain time will be set aside for poster presentations and during that time the delegates will move around the exhibition area stopping to talk to the authors of those posters that particularly interest them. Advice on how to produce good quality posters is given in the further resources section at the end of this chapter.

Publications from conferences

Some conferences offer presenters the opportunity of publishing their paper in a book of conference proceedings. This usually involves giving you the opportunity to rewrite your paper to a fairly tight deadline. Unlike the abstract reviewing process there is generally no further peer review, as that is assumed to have taken place in your presentation. You need to think carefully about whether or not you want to take this opportunity which is a guaranteed publication, or whether you would prefer to aim for a journal instead where there is no guarantee that your manuscript will be accepted. What you cannot do is publish the same paper in both.

Unless you feel you have a groundbreaking research study to report, I would advise you to take the conference proceeding option. Even though it is regarded as less prestigious than a paper in a peer-reviewed journal, it is still a publication and will give you valuable experience in writing in this field, as well as some evidence of a track record, if you are seeking funding to further your research.

Writing a journal paper

This is the medium that still carries the maximum esteem and for many disciplines in the UK is considered assessable in the Research Excellence Framework (REF) and in Australia in the Excellence in Research for Australia framework (ERA). Getting research published in a journal takes a very long time and is hard work. Never get put off or discouraged if your paper is rejected for publication, but use the comments of the Editor and/or reviewers as a way of helping you improve your paper. It is best to think of it as a process in which many drafts will be needed rather than as a single version. For your first paper, it is helpful to find someone who has had considerable experience in getting published, to advise you. Preferably this should be someone in the area of pedagogical research rather than subject research, but if this is not possible, ask a colleague with a solid publications track record because the principles of getting published are the same, no matter what the field.

Step one: Target your journal before you start writing

This is a vital step, yet it is surprising how many of us write our study first and then look for somewhere to publish it. This is time-wasting and lacks focus because you need to write your paper to fit with the aims of the journal. Also do a little research on what journal editors are looking for. There is a list of journals

that publish pedagogical research in the further resources section at the end of this chapter. You should look at several journals and find out as much as possible about each of them, before deciding which one to aim for. As all journals have electronic websites, finding information about them is very easy. Here are some general questions to consider:

1. ***What is the journal's purpose?***

This is described in the aims and scope of the journal. What sort of contributions are the editors looking for? Do they welcome empirical reports or do they prefer more discursive theoretical papers? Some journals are multi-disciplinary; others are not. What readership is the journal is aiming at?

As well as reading the aims and scope, you can get a good feel for a journal by browsing back issues, most of which will be available to you or your institution online. This will give you an idea of whether the articles contain a high proportion of tables and statistical data, or whether a qualitative methodology is preferred. Some journals will be more geared towards applied research, others towards more theoretical and/or empirical research.

2. ***Is it open access?***

This needs some careful consideration as it means that your publication will be freely available online to everyone. Your work will be seen by more people and will have faster impact, but it comes at a cost (article-processing charges); sometimes these will be paid by your institution or may be a part of a funded project's anticipated costs. This type of open access is known as Gold Open Access. The other type of open access has been called Green but is also known as self-archiving which means putting a version of your manuscript into a repository which is freely available to everyone. Which version you are allowed to deposit depends on the publisher who will have their own terms and conditions.

A word of caution here about exploitative journals and predatory publishers that offer open access publishing for payment but do not provide rigorous editorial or publishing services. Lists of such journals exist but the surest way to avoid them is to do your research by considering the following indicators of quality and credibility of a journal. While reputable open access journals may require a publication charge, they will not ask for a submission fee until after your manuscript has been accepted through peer review.

3. ***Is it refereed and how?***

This is an important index of quality. There are four basic levels:

a. **Editor alone:** This is the most basic level as the editor acts as the gatekeeper in deciding whether or not others will consider your

manuscript, unless she or he has commissioned your paper, perhaps for a special issue of the journal. An editor's review would mean a fairly swift response but usually not much feedback if she or he turns down your paper as not being suitable for publication in that journal.

b. **Editorial board:** This is not often used today, as the publishing market has become so competitive, but some journals may still rely on their editorial board for a decision on whether or not to publish your manuscript. The feedback you get would tend to be limited but you would receive a fairly swift response.
c. **Peer-reviewed:** This is the standard for established journals and is a mark of rigour, because your work will be reviewed independently by at least two colleagues who are experts in the field. In practice the pressure on editors to find suitable reviewers who are willing and able to respond in the 6–8 weeks usually allowed sometimes makes finding such reviewers difficult. This might mean that reviewers are not always expert, and/or, quite often, that there is a big delay in hearing from the journal as to what has happened on your submission. In my experience, it is not unusual to have to wait several months. Some journals are quicker than others, and the more prestigious the journal, the more competitive it is to get a paper accepted so this will mean more throughput and possibly longer delays. Check to see how many issues a year the journal produces as this will be another indication of how long it might take to get published. Some journals give typical turnaround times on their websites.
d. **Blind peer reviewed:** This is the most rigorous of all the reviewing systems as your manuscript is anonymized so that the reviewers will not be influenced by your status or reputation in the field and will judge the worth of your work on its own merits. Most peer reviewing, whether it is done blind or not, tends to be done anonymously, as the consensus view is that reviewers will be more honest if they are not named. Some journals have a policy whereby the reviewers can identify themselves if they wish.

4. ***How prestigious is it?***

There are published journal metrics such as Incites™Journal Citation Reports®, Scopus Journal metrics, and Altmetric for example, that provide what is known as the impact factor of a journal – meaning the frequency of the number of times an 'average' article in a journal has been cited in a particular time period. This measurement is used to rank journals in terms of prestige, but metrics such as these all require institutional access. Publishers such as Taylor and Francis and Elsevier among others present the latest impact factors in a list of their journals grouped by subject.

There are, however, other ways in which you can gauge the prestige of a journal. Is the journal indexed? Does it have a substantial publication history? Is it published by an established publisher or by a professional society? Other

useful indicators are to look at who is the editor and who is on the editorial board; you should recognize at least some of them as important scholars in your field. Have you read some of the articles in this journal, and do they meet the criteria for rigour and quality?

In summary, the prestige of a journal may not be an important consideration for you if this is your first publication, but if you are keen to build a track record in pedagogical research and contribute to the scholarship in the field then you might wish to aim high. Making sure you are targeting a reputable journal also safeguards you against publishing in journals that are exploitative or vanity press.

Step two: Follow the instructions for authors

Once you have decided on your journal you should read, digest and follow the instructions for authors for the submission of manuscripts. Each journal has its own requirements but you should follow the guidelines exactly. They can readily be found on the journal's website and will include instructions about word limits, style, formatting and references. A colleague and I recently had a chastening experience when our submitted manuscript was returned unread as it exceeded the journal's word limit. Journal space is precious and costly. Some journals will require you to make an ethics statement, disclose any funding and/or conflicts of interest. Many publishers provide further guidance on their websites; one example is Taylor & Francis AuthorServices www.authorservices.taylorandfrancis.com/.

Step three: Write your paper

Write your paper, being careful to use a similar style to that used in your targeted journal. Ask your mentor for feedback on your first draft. If you can get feedback from more than one colleague, so much the better. Some university departments set up writing for research networks where manuscripts are circulated between members of the group. This is an excellent way to help each other in getting published and has the added advantage of keeping you on track with your writing, when other pressures intrude. You might want to consider establishing a pedagogical action research network for this purpose.

Once you have received feedback from your colleagues, you will need to revise your draft until you are satisfied that it is ready for submission. Make sure that each draft is numbered and dated and saved in several different places and that you have clearly labelled the version that you have submitted to the journal you have chosen.

Step four: Submit your paper

Following the instructions, submit your paper to the relevant editor; some journals have specified editors for certain types of submissions or cover

geographical locations. Many publishers use online submission systems such as ScholarOne Manuscripts by Taylor & Francis. Each journal that uses such a system will give you a step-by-step guide as to what files you will need. Experience has taught me to put aside half a day to submit using these types of system especially if you are new to them. You need to have everything ready such as a list of your co-authors together with their contact details, an anonymized version for blind review and a non-anonymized version that will also need to be sent, not to mention separate files for key words, abstract, figures and tables. The systems I have used will then build a PDF file which is your submission. You will get a copy of the PDF file and an acknowledgment from the editor. Whether or not you use an online submission system, it is customary to write some brief cover letter or email to the editor as illustrated in Appendix M.

Most turnaround times are supposed to be within the region of six to eight weeks, but in my experience it is often a great deal longer than that. You can check the progress of your manuscript if you are using an online system but usually this will tell you only that it is out for review. If you have not heard from the editor after about three months, it is a good idea to send him or her a polite reminder asking how far the reviewing process has got.

Occasionally, the editor will send your manuscript back saying it is not suitable for reviewing for the journal. This is naturally disappointing, but is unlikely to happen if you have made sure it fits the journal's aims and scope and is written in a similar style to articles published in the journal. However, if it does happen, the best action to take is to submit it right away to another journal, even if this does mean extra work in tailoring it to different requirements. The worst response is to feel so demoralized that you consign the paper to never being published, which is a waste of time, energy and commitment. If however, after submitting to a second journal, you get another rejection without getting to the review process, it might be a better option to accept that your research is premature for journal publication. In this case you can concentrate on disseminating it elsewhere as detailed below in the section on other publications.

Step five: Responding to the reviewers

When you do hear from the editor (usually by email) it is likely that you will receive his or her editorial decision together with copies of the referees' comments. This will usually take one of these forms:

1. *Accept without any revisions*
   This does not happen very often, but is very nice when it does.
2. *Accept with minor revisions*
   This tends to mean you need to do some more work involving responding to all the referees' comments and paying particular attention to anything the

editor wants you to take account of. In my view, if you get a decision like this, it is always worth doing, as your paper will very likely be published as long as you do what has been asked. In order to give yourself the best possible chance of having your revised manuscript accepted, make sure you send an additional letter to the editor (see Appendix N for an example), showing how and where you have made the necessary changes. Online systems will ask you to do this, as part of your revision. Appendix O is an example of the kind of document that should also be sent to the editor. Using a template like this one enables you to detail the referees' comments and show how and where in the manuscript you have responded to them. This will save the editor's time and hopefully make for a swift decision to publish your revised manuscript.

3. *Accept with major revisions*
   This is quite common and it is quite difficult to know what to do as it usually involves asking you to get more data, which is not always possible, or to re-analyze your data and substantially rewrite the paper. It is likely that the same reviewers who commented on your original manuscript will be asked to review your revised paper. If you have been asked to re-analyze your existing data and rewrite, this could be worth doing as it means you might still get your paper accepted. However, a recent personal experience with a journal submission has made me a little less optimistic about getting a paper accepted if you are asked to do major revisions. My advice would be to think carefully before you embark on what could be substantial further work as there is no guarantee that your revised manuscript will ultimately be accepted for publication. If you are asked to collect more data, this can be much more difficult as pedagogical action research tends to involve students, so usually the opportunity has gone by as they have moved on. In these cases I would take note of all the referees' comments, and re-write what was possible, before submitting it to another journal.
4. *Rejection*
   This is the most discouraging response but it happens to all of us. The best thing you can do here is to use the referees' suggestions to write a better paper to submit elsewhere. The worst thing you can do is to give up.

Step six: The final stages

Having had your article accepted and having complied with any required changes, you submit it again in the requested format and then you have to be patient and wait. Some journals have a period of several months before they can fit your paper in and usually the editor will tell you roughly how long. However with the advent of open access this has been substantially reduced. You will be sent various legal forms to sign to say it has not appeared anywhere else and to sign various copyright agreements, then you wait again. Then quite unexpectedly, you will

get the proofs of your paper, when you typically have about three days to check them and return to the editor or person dealing with your paper. The instructions will tell you that changing proofs at this stage is very expensive so they only want you to change mistakes, not re-write anything. It pays you to go through your proofs very carefully as typesetters do often make very tiny but important mistakes which can be very difficult to spot. Make sure you use conventional proofreading symbols, of which there are many examples on the internet.

When your article is published, some journals offer you 20–30 free reprints, free online access to your article (e-print links can enable you to give anyone access to your online article up to a specified number of times) and sometimes a hard copy of the journal issue in which your paper appears. This is the time to publicize your work as much as possible, by self-archiving in your institutional repository; adding details of your DOI (Digital object identifier) and your ORCID number www.orcid.org/ underneath your email signature; updating your webpages; using social media such as Facebook and Twitter; linking your article to any professional and academic working networks you belong to such as Academia.edu or ResearchGate; and by telling people about your publication on your blog. Some publishers such as Taylor & Francis can guide and support you to create a video abstract that they will put on their website. In short, do everything in your power to get your journal article read and cited by as many people as possible.

Other publications

Depending on your purpose you may decide to publish your research in other publications. These might include:

- in-house journals (good for disseminating pedagogical research across the institution, and for making yourself known, as it is likely to be read by your institutional senior managers);
- chapters in edited books (usually you are approached by the editors to contribute);
- conference proceedings (as described above);
- newsletters, such as those produced by many organizations such as ISSOTL and SRHE.

Some of these publications are more stringent in their requirements than others, but as a general guide I would suggest that you use the same broad principles described for getting a journal paper published, adapted to specific requirements.

Summary

Getting published is the key to growing the influence of your pedagogical action research study, and to building your profile in this area. If you have

never published in the field before, it might be helpful to start with your subject networks and/or communities of practice if your research is discipline-specific. If it is more generic, my advice would be to aim first for a conference paper, and then develop that into a journal paper or newsletter article, or both.

Sometimes colleagues are uncertain about whether or not they can publish the same piece in more than one place. Unless you have specific permission from the editor of your original publication, the answer is no. However, it is possible to publish different versions of the same study suited to different publications, so you might say in your journal article that an earlier version of the paper was given at a conference, or, you might in a newsletter give a broad outline of the study concentrating perhaps on the pedagogical implications and referring the reader to your journal article. Always check beforehand with the editor of each publication that this is acceptable. The main point is you should aim to make your research impact as widely as possible, for your own reputation, for pedagogical change and for building a track record which will help you in any bidding for funding you might undertake. This is the subject of the second section of this chapter.

PART 2. SEEKING RESEARCH FUNDING

This is a process not to be entered into lightly as it is extremely time-consuming and highly competitive. Anecdotally, experienced researchers have told me that you can expect to have one success for every seven applications. So you may ask 'Is it worth it?' The answer is 'yes', for four main reasons:

1. If you want your action research to grow, you will need funding to support further research cycles.
2. Success breeds success, so you are more likely to win further funding if you have been successful in the past.
3. Attracting funding is a major indicator of research prestige, so it may well be a good move for your academic career.
4. Bringing in external funding for pedagogical action research will do much to raise its status, and yours, within your institution.

Internal funding

Depending on your institution, there may be funding set aside to support pedagogical research and/or learning and teaching innovations, but it is more likely that you will have to compete with more traditional subject research bids for available monies. It is always worth exploring the possibilities within your own institution, especially if you want limited funds, as the process of bid writing is probably going to be easier and quicker than applying for external funds.

External funding

The range of opportunities for research funding in higher education is increasingly hard to find and highly competitive. Of the sources I know in the UK that still offer small grants, the Staff and Educational Development Association (SEDA) has funding for research and evaluation and the Society for Research into Higher Education (SRHE) offers annual research awards relating to higher education. The British Association for International and Comparative Education (BAICE) offers seedcorn grants for pilot projects and scoping work. It also has grants for building research capacity and networks and although the lead applicants have to be based in the UK, co-applicants may come from different organizations anywhere in the world. Other sources to explore include the charities, each of which will have their own particular missions. Finally, in the UK there are the big funding councils:

- Arts and Humanities Research Council (AHRC)
- Biotechnology and Biological Sciences Research Council (BBSRC)
- Engineering and Physical Sciences Research Council (EPSRC)
- Economic and Social Research Council (ESRC)
- Medical Research Council (MRC)
- Natural Environment Research Council (NERC)
- Science and Technology Facilities Council (STFC)

These councils will fund large-scale projects on higher education, sometimes international and often focusing on issues of social justice and mobility.

Whether you are going for a small grant or a much larger one, you will need to follow the instructions and criteria very closely, but there are some general principles that are common to all, which I outline below:

Identifying your funding source

First of all you have to decide what you need the money for. This may sound obvious, but there is a lot of work involved in developing a research bid, so you need to be clear in your own mind that you actually need the money. In Maureen and Mike's case, they have a pedagogical initiative that they want to develop and research its efficacy. Being busy academics they realize that they will not have time to collate and analyze the data for their wiki research. Funding of £5,000 would enable them to employ a research assistant on an hourly basis who could carry out a qualitative analysis on students' wiki entries and on their assignments to see if there was evidence of advanced critical thinking.

Secondly, you have to focus on why your research is important and what relevance it will have for the funding agency. Let us suppose Maureen and Mike decide to apply for a mini-project grant from their university. Their proposed

research study would not necessarily align closely with the type of projects that their university supports, so they may have to adapt their application to have more of a generic focus or highlight the many disciplines within the institution that use statistics.

This is the most important part of the bidding process, for unless you can align your research with the funder's aims, no matter how worthwhile your proposal is, it will not be funded. Colleagues, who are successful in winning research funds will also advise you to try and build up some sort of rapport with the funding agency beforehand, and seek their advice informally before you actually start developing your bid. Many funding organizations publish details of past holders so it might be useful to contact them to ask if they can give you any advice. They may even be willing to share their application form with you, to give you an idea of how to stand the best chance of success.

Preparing your proposal

Once you have identified a possible source of funding, the most important thing to do is to read any advice or instructions that they give you and be sure to follow the application guidelines exactly. In most cases they will include the following sections:

- **Contact details:** Make sure you include all the requested information and identify the person to communicate with. It is helpful if the lead researcher already has a proven track record in research and/or in managing projects. This is where building up a publications record in pedagogical research comes in useful.
- **Title of project:** This should be explicit and clearly summarize what the project is about.
- **Summary of project:** Think of this as an executive summary, which will give your reader their first impression of the project. It needs to be succinct and written in easy-to-understand non-specialist language.
- **Aims:** These need to fit very closely with the criteria and objectives of the funding body and should be written in a clear style that is understood by non-experts. This is the place where you are justifying why there is a need for the research to be done, so it should be situated in the appropriate literature.
- **Methods/activities:** In this section you must show a well thought out project, which addresses the aims and gives a feasible timescale for completion. A Gantt chart can be useful for indicating activities during the project's lifetime.
- **Outcomes:** Many funding bodies will set out what they expect, so be sure to put in writing that you will meet these specified outcomes as a minimum. Be specific in your outcomes. If you are aiming for a publication in a journal, name it. Do not promise an unrealistic number of outcomes.

- **Budget details:** These need to be as specific as possible (see Appendix P for an example of a simple itemized budget). Projects are often turned down because the proposed expenditure is not itemized in sufficient detail or inflated amounts are asked for. It does not look good, for instance, if you claim huge amounts of money for photocopying just to claim the maximum funding possible. It is far better to claim exactly what you need and be prepared to give precise details, such as hourly rates for research assistance, properly costed requests for conference attendance and subsistence, publishing in open access journals, details of exact equipment costs and so on. It can be very helpful to acquire matched funding if possible as value for money is an important factor.

Managing your research funding

If you are successful, the work begins. If you are not successful, the same principles apply as with a rejection for a publication: you need to take account of any feedback and apply somewhere else.

Managing a research project can be somewhat daunting, particularly if it is a collaborative inter-institutional study, such as those I have been involved with. The key to success is clear communication and a well-defined structure so everyone understands who is responsible for which element of the task. Skype video calling, video-conferencing and telephone conferencing are good ways of keeping in touch with everyone involved.

I have learned from experience that some of the more common mistakes in managing research projects, even very small ones, include:

- not allowing sufficient time at the start of the study to recruit research assistants;
- not contacting the funding agency soon enough if the research study has been held up for some reason;
- not having a contingency plan, if research assistants leave before the project is completed;
- not allowing flexibility if the research changes direction; sometimes serendipitous findings turn out to be more important than your original research aims, but you need to keep your funding agency fully briefed;
- not completing the project on time; if this looks likely to be the case, let the funding agency know with a re-profiled and realistic timeline;
- not delivering the promised outcomes.

Careful planning at the outset should reduce the possibility of these glitches and ensure you keep to your project deadlines.

Summary

Extending the influence of your pedagogical action research may well need funding to support further cycles. In this section, I have briefly touched upon the basics of identifying funding agencies and putting a funding proposal together. I have not gone into detail, since funding bodies tend to give their own specific instructions. Managing a research project may seem at first sight to be rather forbidding. It just needs careful planning and regular communication within the team and equally importantly, with the funding agency. Building up a good reputation in this way will help in your future bids and will also enhance your professional prestige.

Synopsis

- In this final chapter I have come full circle, like action research itself, by describing how you can disseminate your findings and bid for funding which then provides the basis for your next wave or cycle of action research.
- In the first part of the chapter on dissemination, I have used a fictional vignette, not only to illustrate the many outlets that are open to you, but also to address the realities of gaining support for pedagogical research in a context that is not always supportive.
- Throughout the chapter, I have stressed the importance of dissemination, as without it, pedagogical action research is little more than private reflection or curriculum development. It is *essential* for your work to be opened up to the scrutiny of your peers.
- Since pedagogical action research has this unique dual role of being carried out specifically to modify the researcher/practitioner's own practice as well as contributing to knowledge, I have organized the chapter accordingly by suggesting that the primary purpose of your research will largely determine where you want to disseminate it.
- Given that conferences and journal publications are the more usual ways of disseminating research, I have concentrated on these two outlets in some detail.
- In the second part of the chapter, on applying for research funding, I have given some broad advice, since so much depends on the funding agency itself. In my view, it is often a good idea to start small in order to build your pedagogical action research experience. It is surprising what can be done with a modest amount of funding.
- Finally, I give some basic guidance on managing a funded research project, although here again, you will need to build your own experience, so small-scale projects are a good way to begin.

Reading and further resources

Getting published

Wisker, G. (2015) *Getting Published: Academic Publishing Success.* Palgrave Macmillan. A book that is of relevance to doctoral students, practitioners, researchers and established academics.

Emerald Publishing has a number of useful 'how to' guides for authors on their website including 'How to get published and disseminate your work': www.emeraldgrouppublishing.com/authors/guides/promote/index.htm

Conference posters

How to create a research poster: poster basics. A useful website by New York University Libraries which also has pages on design tips, logos and images: www.guides.nyu.edu/posters Many conferences also give their own guidelines.

Learning and teaching conferences

Check the CONAL website (Conference Alerts. Academic conferences worldwide) which lists conferences by topic or by country and then you can search by date. The link for the higher education topic is: www.conferencealerts.com/topic-listing?topic=higher%20education

Journals that publish pedagogical research

As there are so many journals available, a good starting point might be a university library guide. An example that I have found to be useful is produced by the Institute of Education at University College London which gives a list of teaching practice in higher education journals, organized alphabetically by title: www.libguides.ioe.ac.uk/heteaching/subjectjournals.

My own selection of journals which publish generic pedagogical research, although not always pedagogical action research, is not exhaustive but would include:

- *Action Learning: Research and Practice*
  www.tandfonline.com/toc/calr20/current
- *Assessment & Evaluation in Higher Education*
  www.tandfonline.com/toc/caeh20/current
- *British Educational Research Journal*
  www.onlinelibrary.wiley.com/journal/10.1002/(ISSN)1469–3518
- *British Journal of Educational Studies*
  www.tandfonline.com/toc/rbje20/current

- *Computers & Education*
  www.journals.elsevier.com/computers-and-education/
- *Educational Action Research*
  www.tandfonline.com/toc/reac20/current
- *Educational Studies*
  www.tandfonline.com/toc/ceds20/current
- *E-Learning and Digital Media*
  www.journals.sagepub.com/home/ldm
- *Higher Education. The international journal of Higher Education Research*
  www.link.springer.com/journal/10734
- *Higher Education Pedagogies*
  www.tandfonline.com/toc/rhep/current
- *Higher Education Research and Development*
  www.tandfonline.com/toc/cher20/current
- *Innovations in Education and Teaching International*
  www.tandfonline.com/toc/riie20/current
- *International Journal for Academic Development*
  www.tandfonline.com/toc/rija20/current
- *The Internet and Higher Education*
  www.journals.elsevier.com/the-internet-and-higher-education/
- *Journal of Further and Higher Education*
  www.tandfonline.com/toc/cjfh20/current
- *The Journal of Higher Education*
  www.tandfonline.com/toc/uhej20/current
- *Learning and Instruction*
  www.journals.elsevier.com/learning-and-instruction/
- *Learning, Media and Technology*
  www.tandfonline.com/toc/cjem20/current
- *Open Learning: The Journal of Open, Distance and e-learning*
  www.tandfonline.com/toc/copl20/current
- *Studies in Higher Education*
  www.tandfonline.com/toc/cshe20/current
- *Teaching in Higher Education*
  www.tandfonline.com/toc/cthe20/current

Appendix A

Practical methods to develop your reflective practice

Pedagogical reflection in action research is about your own personal thinking about teaching and learning as well as your values and beliefs, rather than simply being a reflection on the teaching itself.

You can choose to do it privately through writing or recording your thoughts by audio, or you may prefer to reflect with a trusted mentor or collaboratively with your colleagues. You may decide to do it while your teaching or learner facilitation is ongoing, or after the event; Schön (1983) describes this distinction as reflection-in-action and reflection-on-action. You may decide to repeatedly reflect – a process that I have personally found to be invaluable, as what I thought I had learned from my reflections has changed with the passage of time.

There is no shortage of guidance or suggestions on the internet and in the literature for reflection and reflective practice; however, trying to use a system or a practice that just does not suit you can be a dispiriting process, so you should adopt and adapt a method that suits your needs. I give below some suggested resources, but perhaps the easiest way to begin is to ask yourself some questions:

To help you reflect on your practice:

1. What works well?
    - Why?
2. What does not work well?
    - Why?
3. How do I *know*?
    - My instincts/feelings?
    - Colleagues' observations?
    - Students' behaviour/feedback/performance?
    - Reading the literature?
4. Who do I need to talk to?
    - Students/colleagues/mentor?

5. What might I change?
    - How?
6. What should I keep?
    - Why?

To help you to be reflecting as a practitioner-action researcher:

7. What has happened to me and my practice as a result of reflecting?
8. What do I know now that I didn't know before?
9. What more do I still need to find out?
10. What have I learned from reviewing the literature in my chosen area?
11. How will I take account of what I have learned?
12. How will my reflections affect my future practice –
    - in terms of my professional role?
    - in terms of my professional identity?
    - in terms of my current educational context?

Resources

Models of reflective practice

While there are many different models of reflective practice, a commonly used tool in teaching has been Gibbs' (1988) reflective cycle as it works well when you want to focus on a specific learning or teaching area of practice. The following link takes you to a study skills page, but is useful as it gives a worked example from a health visitor.

Online. Available at: www.brookes.ac.uk/students/upgrade/study-skills/reflective-writing-gibbs/ (accessed 1 May 2018).

Reflective journals

Some colleagues find it useful to keep a professional reflective journal, but I would only suggest this if it works for you. Rönnerman (2003) suggests a very practical approach to keeping a reflective journal where all the left pages are descriptions of what happens and the right pages are reserved for your comments and reflections.

Websites

Jenny Moon is the person most closely associated with reflective writing in academia (Moon, 2008). Her website includes critical thinking, learning journals, and reflective learning.

Online. Available: www.cemp.ac.uk/people/jennymoon.php (accessed 1 May 2018).

Additional reading

Gibbs, G. (1988) *Learning by Doing: A guide to teaching and learning methods*. Oxford: Oxford Polytechnic, Further Education Unit.

Moon, J.A. (2008) *Reflection in Learning & Professional Development*. Abingdon, Oxon: RoutledgeFalmer.

Rönnerman, K. (2003) 'Action research: educational tools and the improvement of practice', *Educational Action Research*, 11 (1): 9–22.

Schön, D. (1983) *The Reflective Practitioner: How Professionals Think In Action*. New York: Basic Books.

Appendix B

How action research can support an application for Associate Fellowship of the HEA

Richard: reflecting on how library guides can be more effectively used by students

Richard is the Law Faculty librarian working in a research-intensive university. Richard sits on the Faculty research committee and in response to an ongoing issue that repeatedly features on the agenda, has for many years been producing a set of guides for both undergraduate and postgraduate students – including information seeking, critical evaluation, referencing and plagiarism. In a recent committee meeting of the Law Faculty concerns have been raised that students at all levels lack criticality in their written work, but no mention is made of Richard's guides. Troubled by this, he decides to explore the academic staff's knowledge of these guides using a simple questionnaire on Survey Monkey. This revealed that out of 107 Law academics, 86% were unaware of these guides. Richard decided to enlist the help of the vibrant community of graduate teaching assistants to carry out an action research study. Karen, Jack and Leo seized the opportunity and together with Richard's librarianship expertise and their own very practical understanding of students' reluctance to develop more information literacy, a collaborative action research study was designed. The aim was to use microblogging via Twitter as a tool to remind students of the guides, create a backchannel for them to communicate with each other and make suggestions for enhancing the guides. The intervention was planned for the first year undergraduates, as these were the classes that Karen, Jack and Leo taught. Regular meetings were held between Richard and the graduate teaching assistants, and from time to time, some of the Law lecturers who were interested as the process developed. Initial student evaluations suggested that the guides were used more when Twitter

reminders were instigated, but students wanted them online with hyperlinks to other resources, and 'brief guides' that would take less than 10 minutes to read. Trials of these refinements formed the basis of the second cycle of action research and Richard presented his work to his librarian colleagues and with Karen, Jack and Leo to the Law Faculty, inside the university and to the Association of Law teachers in one of their annual conferences.

Considering how Richard might use his collaborative action research study as evidence for an Associate Fellowship application, he first had to decide on which two of the five UK Professional Standards Framework (UKPSF) Areas of Activity (other levels of Fellowship are required to do all five) he would focus on:

1. Designing and planning of learning activities
2. Teaching and/or support of learning
3. Assessing and giving feedback to learners
4. Developing effective learning environments and approaches to student support and guidance
5. Engaging in CPD in subjects and their pedagogy, incorporating research, scholarship and the evaluation of professional practices

After talking it through with a colleague in IT who had successfully achieved an Associate Fellowship, Richard chose Areas of Activity 4 and 5 and decided to use the action research study for both, focusing on the strategies and the outcomes in Area of Activity 4, and reflecting on his own development and what he had learned from the action research study in Area of Activity 5.

I have summarized the HEA guidelines (available from the HEA website) for each of these two Areas of Activity and developed them in terms of how Richard might complete his application form:

Area of Activity 4: Developing effective learning environments and approaches to student support and guidance

The HEA guide suggests six points to consider:

1. In describing his educational environment, Richard will draw on his knowledge and understanding of the academics' perspective of student challenge, referring not only to his expertise as an academic librarian abut also his experience of being a member of the Law Faculty committee.
2. In using examples from his practice to show how he has supported students, Richard will concentrate on the student-facing activities that he facilitates with the Law students, and might well draw on parts of his action research study here.

3. In showing how he has contributed to making the learning environment more effective for learners, Richard will draw on his librarian's role in the Faculty working alongside the academics.
4. In demonstrating his contribution to supporting and guiding the Law students Richard will draw on his librarian's role here in teaching information literacy skills.
5. In reflecting on why he has chosen particular strategies and how well they worked, Richard will consult with the Law academics and the graduate teaching assistants for their views on his work to help him with his evaluation. He may also choose to use some of the students' evaluations from the action research itself.
6. The application guidelines also ask for evidence of incorporating other Dimensions of the Framework, such as relevant Core Knowledge and Professional Values that he has used and why. Taking the advice of his IT friend, Richard knows how important it is to adopt a reflective rather than a descriptive stance throughout the application so will use this section not to list everything but to concentrate instead on Core Knowledge 'K4: Use and value of appropriate learning technology'. As part of his skills set and professional knowledge as an academic librarian, Richard is able to draw on a substantial and up-to-date knowledge base here. For the Professional Values, he again plays to his strength as a librarian and opts to highlight 'V3: Use evidence-informed approaches and the outcomes from research scholarship and CPD'. As well as briefly mentioning his own action research, Richard is well-versed in the literature related to teaching law and can draw on this in his application.

Area of Activity 5: Engaging in CPD in subjects and their pedagogy, incorporating research, scholarship and the evaluation of professional practices.

The HEA guide suggests that you should think about how you might demonstrate that you have become a better practitioner 'through continuing professional development, research and the evaluation of your teaching- and learning-related practices.' Three types of evidence are recommended, to which I have added Richard's potential responses.

1. In seeking to show how he updates and develops his capability as an academic librarian who teaches students information seeking and critical evaluation, Richard will present his action research study and reflect on how it has provided an impetus to attend and present at the annual conference of the Association of Law teachers. He will also be able to show that, as part of this action research, he has read widely in the literature on developing students' skills online and attended an HEA workshop on legal information literacy standards. In his reflection Richard will indicate how doing an action research study led him to much broader areas of continuing professional development than he might otherwise have considered.

2. Richard will show he has used the outcomes from any continuing professional development strategies to improve learning experiences and one's own professional practice by again drawing on his action research study in more detail, particularly reflecting on the second cycle, the collaboration with the graduate teaching assistants and students' initial reactions to the online resources. In so doing he will be able to directly demonstrate the effects on his own practice as a librarian. Rather than merely describing these developments, Richard will also be careful to demonstrate his ongoing professional development and his plans to learn more about digital resources, by showing how he has attended HEA workshop events, and has specific plans for future CPD events.
3. Finally, Richard will show how his work includes relevant Core Knowledge and Professional Values by focusing on 'K4: The use and value of appropriate learning technologies'. He can make this distinctive from what he has written in Area of Activity 4 by concentrating on the learning technologies used in the action research study. In 'K5: Methods for evaluating the effectiveness of teaching', Richard will draw on the action research findings and on further suggestions made by the audience at his conference presentation. For Professional Values, Richard will select 'V4: Acknowledge the wider context in which higher education operates recognizing the implications for professional practice', as he is keen to reflect on the affordances and potential weaknesses of pedagogical action research in the higher education sector.

I have spent some time developing this fictional application to indicate how an action research study might be used as part of an account of professional practice in an application for Associate Fellow of the HEA (Descriptor 1 of the UKPSF). I focused on Richard, but Karen, Jack and Leo, the graduate teaching assistants could well have used their experience in the action research study to support their own applications. The example is not complete, nor is it intended to be a perfect model, but it will give you some ideas of how such an application might be made. It will be particularly relevant to other practitioners as well as to librarians; for example central student support staff such as disability advisers and counsellors, laboratory technicians/demonstrators and Information Technology specialists, all of whom may find themselves in a teaching-related role with students. Anyone who is interested should read further the detailed guidance that can be obtained from the HEA in a downloadable application pack. Similar packs are available for applications for Fellow, Senior Fellow and Principal Fellow (Descriptors, 2, 3 and 4 of the UKPSF).

Appendix C

How action research can articulate with the HEA categories of Fellowship

The HEA awards four categories of Fellowship which are fully described on its website; briefly, these are:

1. Associate Fellow of the HEA (AFHEA) is for those who have some teaching responsibilities, who may well be early career researchers, new to teaching, those working in a support role (learning technologists, librarians, demonstrators), or professionals in their own right who are entering the university domain.
2. Fellow of the HEA (FHEA) typically applies to people who have extensive substantive teaching and learning support responsibilities, working as an academic or in an academic-related/support role.
3. Senior Fellow of the HEA (SFHEA) is a category for experienced staff who are able to demonstrate evidence of a sustained record of effectiveness within teaching and supporting learning, which includes evidence of impact and influence as a leader or organiser of academic teams, as a mentor of those new to university teaching, or through departmental or wider advisory responsibilities related to learning and teaching within their institution.
4. Principal Fellow of the HEA (PFHEA) is for individuals who have responsibility for institutional strategic thought leadership and policymaking responsibilities within learning and teaching with evidence of a sustained track record of impact in learning and teaching at a strategic level, either within their institution or beyond, perhaps internationally.

What is common to all these categories is the need for applicants to demonstrate how they meet the relevant Descriptor and Dimensions of the UK Professional Standards Framework for teaching and supporting learning in higher education (UKPSF, 2011). Each category of Fellowship has a distinct Descriptor that needs to be met and there are three categories of Dimensions: i) Areas of Activity; ii) Core Knowledge, and iii) Professional Values. In evidencing how their practice meets the Descriptor, applicants need to provide examples of their

practice that demonstrate their commitment to a reflective approach to teaching and supporting learning within their particular context, rather than a list of academic roles, responsibilities and achievements. In meeting these requirements, reporting and reflecting on a pedagogical action research study could be a useful source of evidence.

Appendix D

Using your teaching experience to generate action research questions: the reconnaissance stage

A teaching issue: 'I pack too much information in my lectures and go too fast.'

Looking at this issue I might be tempted to jump straight in and decide on a research question such as 'What will be the effects of reducing the lecture content I deliver?' However, I might be more cautious and invest some time in reading something about teaching in university, which would help me understand where my own teaching beliefs lie and how they affect my teaching approach. This would reveal to me a more nuanced issue than simply one of improving my teaching skills such as speaking more slowly or covering less in a lecture. My action research question might then become: 'How do my teaching beliefs align with my students' expectations?' Of course this is just one of many potential research areas that could come out of this question; others might be to survey the teaching beliefs of colleagues in my department, or investigate my students' expectations or their prior educational experiences. Any of these lines of enquiry would lead me to a richer understanding of both my teaching and my students' learning.

A learning issue: 'My students do not use the online discussion forum I set up and prefer to communicate with each other on Facebook.'

One way of investigating this might be asking a simple research question such as 'Why don't students participate in asynchronous online discussions?' My first cycle of action research could seek colleagues' views as it is a common problem (see, for example, Mazuro and Rao, 2011; Deng and Tavares, 2013). I might also read some of the relevant pedagogical literature to follow up some possible explanations. Some studies suggest, for example, that lack of engagement may be due to the inhibiting factor of the teacher's presence, or some students being more reticent than others, or the content of some of the posts being superficial. Pursuing any one of these would lead to a more specific research question such

as 'How do I encourage reticent students to contribute forum posts?' This would give me a practitioner-based issue that I could research.

In both these examples, I think it would be helpful to develop our research question carefully by firstly consulting with colleagues and by reading some relevant studies.

Appendix E

Constructing a research protocol

Context

Please note this is a protocol for a more traditional research study rather than one specifically for action research. I have added some further detail in italics to better fit with an action research study. In an action research study, you might well take the view that the level of detail and implied objectivity I have set out above is contraindicated. My response is that in this book, I am putting forward the case for making your research as rigorous as possible and this is one way to do it. Your decisions will depend on what types of claim you are making to knowledge and who your potential audience may be. A useful way to think about rigour is to consider it in terms of being meticulous, thorough and paying scrupulous attention to detail.

The guidance in this appendix has been adapted from a version that I used for research on lecturers' perceptions of assessment, marking and feedback which was funded by the Write Now Centre of Excellence in Teaching and Learning (CETL). Online. Available: http://www.writenow.ac.uk/. This was part of a UK government-funded programme which ran from 2005 to 2010 and was designed to enhance the status of learning and teaching in higher education. Altogether 73 higher education institutions (69 in England and 4 in Northern Ireland) were funded in this programme, of which the Write NOW CETL was one that I was fortunate to be involved in. It was a partnership between London Metropolitan University, Liverpool Hope University and Aston University. Its aim was to support and develop academic writing and assessment practice within the disciplines. Part of its purpose was to underpin practice with research, including pedagogical action research.

Details of what to include in a research protocol

Front page with full title, a version number and date, contact details of research team (names, institution/s, email and telephone numbers).

Description of proposed research

This should be a succinct summary of the aim/s, significance, design and proposed method/s of your study. The main aims of this section are to synthesize/summarize your intentions so as to give an indication of the study's overall purpose and content.

In action research the aim/s will be framed to answer the overall question 'How do I...?' It will relate directly to the pedagogical concern you have identified. The significance of your work can be thought of in terms of advancing knowledge that may be contributing to theoretical understandings and advancing knowledge of pedagogical practice.

McNiff (2017, pp.216–225) suggests three areas of potential significance that I have adapted for the Higher Education context:

1. For yourself (as a reflective practitioner-researcher in learning and teaching)
2. For others (this may include your colleagues as well as your students)
3. For the world (in terms of a wider systems approach; this may be for policymakers or the keepers of quality standards in the discipline, among others)
4. Getting recognized by a community (McNiff suggests communities of researchers in which you can use your action research to influence established views of how research is done)

Your research design and methods will need to show how your proposed action research study will answer the research question you have set out.

Theoretical background including a critical review of the current research literature: What is already known about the problem? What is not known? What are some of the problems or shortcomings of previous work in the area? How will your proposed study expand this body of knowledge?

In action research, your focus will be on the practitioner perspective, so you will need to draw on the pedagogical practice literature including the scholarship of teaching and learning.

Research methodology with justification for proposed methods to be used. This section normally describes the plan for accomplishing the proposed work and usually consists of several subsections. These subsections relate to the 'heart' of the study and it is important that you include sufficiently detailed information, especially since action research can sometimes be viewed as not 'real' research. The more thought you can put into your research study at this stage, the greater the confidence you will have in its findings. As well as your broad research strategy, which should include a justification of methods you intend to use, it is a good idea to outline any potential methodological difficulties and plans for addressing them.

Design

Clearly describe the type of design to be used and the rationale for its selection. Ensure that the design is congruent with your study's main aim and specific objectives.

Presumably you will be using an action research design so will need to present your case for why this is appropriate.

Materials

Describe any quantitative/qualitative data producing instruments, questionnaires or interview/observation schedules, which are being proposed. If you are going to use a published measure, as opposed to a newly constructed measure, include any details of the instrument's reliability and validity, which may be taken from previous studies or applications. You will also need to indicate how you will obtain materials that are protected by copyright. If you are going to construct your own instrument, detail the steps to be taken in order to establish its reliability and validity. Guidance on this is given in Appendix F. It is also a good idea to include a copy of any measure in an appendix to your protocol, or at least give some sample items or questions. Outline any potential difficulties or limitations associated with the use of the proposed materials.

Sample

Describe the target population/sample/key informants/participants for your study and the procedure for their selection. Detail the rationale for the sample size and characteristics and outline any inclusion or exclusion criteria that you will apply.

Procedure

Detail any procedures relating to the 'how, when and where' of data collection (e.g. how will you gain entry to a particular setting such as lectures or seminar groups? What will you ask your participants to do? How will you deal with non-participation?) I faced this last problem when involved in an unpublished research study with colleagues designed to find out why students were not attending classes. How do you reach them when they are not attending anything? In the end our solution was to use a proxy by asking those who did attend why they thought their peers did not. This was not an ideal solution, but the best that we could do.

Analysis of data justified in accordance with the research design

It is sound research practice to give detailed consideration to the proposed data analysis at the design stage of the proposed research. If you are planning to use statistical analyses, outline which statistical tests will be used. If you are planning to use qualitative data analysis, give as much information as possible relating to

data collation, coding, classification, categorization and/or verification. Outline the general rules or principles, which will drive the proposed analysis (e.g. grounded theory, discourse analysis, phenomenographical analysis).

Timetable and stages of completion

This is an integral part of all research proposals and should indicate a *realistic* timescale, including contingency plans should the research process be held up for any reason. This is quite a common occurrence.

Dissemination plans

Give a brief outline of how the research outcomes might benefit:

- students;
- policy and practice at your own university and at any other participating institution/s;
- the wider academic community at national/international level (include targeted journals, conferences, other publication opportunities).

Continuation plans

This section is a key element in pedagogical action research, which is defined by its cycles of research. While it is not possible to prejudge your results, it could be helpful to think through how your findings might modify practice and what the next cycle of action research might look like. 'In action research it does happen that things do not go exactly according to plan and indeed the approach provides for this. Modifying an action research plan is legitimate as long as it's done in a meticulous manner'. (With thanks to Ruth Balogh for this observation.)

References

Include a full list of all references.

Appendix F

Constructing an attitude scale

Stages in constructing an attitude scale:

1. ***Generate items*** from the relevant literature, from your practice and from experience.

Aim to get as many items as possible in this first stage, as ultimately you should have between 20 and 30 items; any more and your respondents may tire of answering questions, any less and you may not validly capture what it is you are trying to measure. An excess of items at this stage allows you to retain only the best. In devising your items there are several pitfalls to be aware of.

- Socially desirable responses:

Be careful to avoid items that are likely to encourage a socially desirable response rather than a truthful one. It is preferable, for example, for Dr Jones to construct an item about students' attitudes to her teaching that says:

'It is difficult for the lecturer to make the subject easy to understand.'

rather than:

'Dr Jones does not make the subject easy to understand.'

The problem with constructing a scale that has a high number of items that engender socially desirable responses means that there will be a 'ceiling effect' where nearly everyone scores highly and there is little differentiation. A 'floor effect' is the opposite where nearly everyone scores very low, again providing little differentiation between your respondents.

- Response set:

If you word all your items in the same way, respondents might easily fall into an unthinking automatic pattern of just ticking the same response for every item. This is known as a response set. The usual way of getting round this particular problem is to word some of the items negatively, for example:

'It is not difficult for the lecturer to make the subject easy to understand.'

As you can see, this sometimes results in a clumsy form of wording that makes items hard to comprehend. We also have to be very careful when wording some of our items negatively that we remember to reverse the scoring for these items. Even very experienced researchers have been known to have been caught out by this one.

- Double-barrelled items:

Devising items that have more than one element means that the respondent might agree with one part of the item but not with the other, for example:

'It is difficult for the lecturer to make the subject easy to understand and interesting'.

Always make sure that each item only asks about one thing.

- Leading items:

It is very easy to produce an attitude scale where the items are leading the respondent to answer in a particular way, for example:

'Making the subject easy to understand is an essential part of a lecturer's professional responsibility'.

You need to be careful to present your items as neutrally as possible so they are equally likely to produce a 'strongly disagree' response as a 'strongly agree' response.

- Order of items:

Care has to be taken in ordering the items, as sometimes the earlier ones may influence the responses of the later ones. This is an aspect of your attitude scale design that you leave until the end.

2. ***Test for clarity of instructions***

Try to keep the instructions as simple and as precise as possible. For example: 'Rank order the following items' does not explain how the rank ordering works or what the scale is. If there are ten items, is 1 to be given to the most important or is 10? Is it 'importance' you want the respondent to rank or is it some other measure such as relevance to them personally?

If your scale goes over more than one page, it is a good idea to signal at the end of the first page that there are others to follow, and a reminder at the end to make sure that all responses have been completed is also helpful. It can be very frustrating to find that many of your respondents have only completed half your attitude measure. If you are using an electronic method of questionnaire design, it will automatically remind the respondent if they have not done everything.

3. *Test for face validity*

This means checking to see that the items and the instructions make sense to the respondent. You can test this by firstly completing the attitude scale yourself and then piloting it on approximately 20–30 people, preferably those who do not form part of your main study. They will be able to tell you if your items are ambiguous, your instructions are not clear or the response sets do not make sense.

4. *Test for internal validity and consistency*

Using the data collected from your pilot study. One method of doing this is to carry out an item-whole test where what you are looking for is an indication that each item is a good predictor of the whole score, i.e. a high score on the item correlates positively with the total score. The commonest method of doing this is to use a statistical package such as SPSS to establish Cronbach's alpha, which is a measure of internal consistency based on the average inter-item correlation.

If this is acceptable (usually regarded as 0.7 and above) it means that all your items are fine. If it is less than 0.7 the process will also allow you to delete items from the scale until Cronbach's alpha is acceptable. You may find at this stage that some items have to be deleted and others may have to be rewritten. In this case you must go through the whole process of piloting the newly written items again with another sample of 20–30 respondents.

A simpler method, but not so rigorous, is to carry out a split half reliability test where you correlate the total score of items in the first half of your scale with the total score for items in the second half of your scale. Provided you have not banded together similar items in each half, this should show you whether or not you are measuring one thing. If the correlation is unacceptably low, i.e. below 0.7, you will need to rewrite or delete items as suggested above.

5. *Test for reliability*

This basically means finding out whether you will get the same results from the same person if you ask them to complete your measure on two different occasions, usually at least a week apart and better still if you can manage two or three weeks.

Summary

Devising an attitude or measurement scale is no easy task and there are many much more sophisticated ways of establishing its validity and reliability, such as factor analysis, but if you follow the stages outlined above, you will have a basic, reasonably robust instrument that can then be subjected to further analyses, if your research interests take you in that direction.

Appendix G

Case study showing how qualitative and quantitative data can be combined

This example is taken from a published research study by Norton and Norton (2000) exploring students' information skills and reported as one cycle of a much larger action research study which was carried out over several years and was designed to help students with this particular aspect of their academic skills.

This particular study was designed to compare the induction procedures in four different departments to establish what information-seeking skills undergraduates were expected to have at the start of their degree and what help was actually given to them. It was also designed to provide a measure of how effectively these provisions were working by testing students' knowledge about subject-specific materials available in the university library.

Students were set a library quiz relating to their subject and their tutors were then given a copy of this quiz (together with the correct answers) and asked to estimate what proportion of their students would be able to answer the quiz items correctly. Tutors were also asked what their department did to support their students in finding out about these library resources. A further source of information was obtained from departmental handbooks and from personal communications; for example, we obtained the following information in an email from the head of English, who suggested that we should use second- rather than first-year students in our research:

> 'We make a point of discouraging students from using secondary sources in their first year. We concentrate in the first year on looking at primary materials and for this reason are thinking of asking for our students' library induction to take place at the beginning of the second year. In the first year, students are provided with a handbook called the Student Companion – a ring binder to which they are encouraged to add information. There is no formal induction apart from this but the department makes a point of teaching all first years in groups no larger than 12.' (English head of department)

The results were then presented statistically in terms of students' responses to the library quiz followed by comments from their subject tutors and relevant

Table G.1 Correct identification of library classification numbers from English department, adapted from Norton & Norton (2000)

	Lecturers (N=2)		*Students (N=59)*
Subject	Should students know?	How many students would know?	How many students did know?
Poetry	yes	65%	71%
Language	no	35%	0
Novel	yes	65%	85%

information from the documentary analysis. A brief excerpt from the analysis of the English department on one quiz question (see Table G.1) will show you how this worked.

What this table shows is the actual percentage of students who were able to correctly identify the classification numbers for poetry, language and the novel, and the estimated proportion that their two tutors thought would get it right. These statistical findings were then followed with some qualitative analysis. Both tutors thought students should know the class numbers for the novel and for poetry but underestimated the percentage that did. Interestingly, while they did not expect students to know the class number for language they actually over-estimated the proportion who would by 30 per cent, as no students were able to identify this number correctly. In view of the emphasis that one tutor in particular placed on reading the texts over and above everything else, it is perhaps not surprising that no English students knew this particular class number. Both tutors were consistent in where they thought students could get help:

> 'Information from department handbook. Information desk in library. They ask us!' (Tutor 1)
> 'Students' handbook. Library information desk. Using their heads?' (Tutor 2)

The slightly irritated quality of their responses might be because they were being asked about second-year students and not first years, as the other three subjects in this research had been asked, or it may have been a reflection of a genuine subject discipline difference operating here. This study shows how we were able to use the tutors' comments as well as the documentary sources to interpret the statistical findings. This gave us a clearer and richer picture of each of the participating departments' support systems, together with an analysis of how effective these were in terms of students' actual library knowledge.

Appendix H

Case study of a pedagogical action research study to illustrate some ethical issues

Introduction

This example is taken from a collaborative action research study with a small class of seven postgraduate students taking a module on teaching and learning in higher education as part of an MSc in Applied Psychology. I was keen to explore with them the effects of reflecting on their own learning as we went through the module. Specifically I wanted to find out if formal reflection would help them:

1. understand themselves better as learners in postgraduate study;
2. make more sense of the module by applying some of the theoretical topics to their own situation as learners.

What I have done here is to present an excerpt from the abstract that was accepted for a conference of the Collaborative Action Research Network (CARN) and to annotate it with my reflections on ethical issues in italics. In this way, I hope to demonstrate with the benefit of hindsight that what originally looked like a clean and straightforward research proposal with no ethical issues was, now I reflect on it, not that straightforward.

Title: Action research and metacognitive awareness in postgraduate students
Authors: Norton, L., Aiyegbayo, O., Bhatti, N., de-Petro, V., Doyle, C., Matthews, K. and Parry, T., Liverpool Hope University.

Abstract:
The action research project, which is to be reported, comes from earlier work by Norton and Owens (2003) based on a college-wide generic skills programme for first-year undergraduate students. As part of that programme, students were asked to complete a number of self-assessment exercises and instruments including Meyer's (2000) Reflections on Learning Inventory (RoLI ©). They were also required to individually discuss their RoLI © profiles with their academic tutor, and write about what they had discovered about themselves as learners and how they thought this fitted the demands of their academic subjects. Initial findings

suggest that this process has had the effect of raising students' metacognitive awareness although the link with academic performance is not yet clear.

I can see now that I was coming to this study not only with a strong belief in the value of students reflecting on themselves as learners, but also with a considerable personal investment in previous research studies I had been involved in, described in Chapter 9.

Set against this theoretical and empirically driven context, the author wanted to use the same process with a small group of seven postgraduate students taking a module in the *Psychology of Teaching and Learning* as part of an MSc in Applied Psychology. This was a development of the undergraduate programme since these students were also invited to take part in and be part of an action research project, which involved:

1. completing the Reflections of Learning Inventory at the beginning of the module;
2. emailing the module tutor each week with a brief reflective piece about how the topic of that week's session related to their understanding of themselves as learners.

In action research where the participants are also the co-researchers, there should ideally be some joint consideration of the research design, but in this case, the design was entirely mine. I do not recall giving students the chance to change it. This might have been difficult for them to do as I was the one who had the theoretical and the empirical experience, but had I given them the opportunity they might have come up with equally valid ways of thinking about and recording their own reflections on learning, rather than completing an established inventory, as I asked them to do. They might also have preferred not to write each week, but keep a journal and send me excerpts when they were ready, but again I did not give them the opportunity to do this, or even to discuss alternative methods of reflection. What we did discuss was purely a pragmatic matter of what would be the best way to collect the weekly reflections and we agreed emailing them to me would serve this purpose.

In this way, students were encouraged to actively apply their understandings of what had been discussed in each session to their own scores on the RoLI© and to reflect on any changes in insight as a result of what they had learned in each session.

Once again I took the lead and said I would not respond in any way to their emails but just record them. To be fair to myself, I took this decision partly because I did not want to overburden them, and I was taking seriously the ethical issue of asking students to do extra work, which I hoped would enhance their learning, but I could not guarantee it. As I look back on it now, I think what a wasted opportunity that was for some real tutor-student dialogue on meta-learning.

The author offered to lead the action research project and to accredit all participating students with joint authorship.

Why did I not empower the students, by offering them the chance to lead if they wanted to?

Since the author was also one of the researchers and the module tutor, participation was entirely voluntary and had no implications for the assessment of the module. Six of the seven students registered on the module were keen to take part. The seventh student was unable to attend many of the taught sessions and was therefore unable to contribute to the project.

This is a clear example of what I mean in Chapter 10 when I discuss the difference between taking the necessary pragmatic steps to consider ethical issues and to think ethically. In such a small class, how hard it must have been for anyone to say no. Although I am sure they trusted me in what I said about it not affecting their assessment in any way, the social pressures of non-participation must have been considerable.

This paper reports on this initiative and reflects on the outcomes from:

1. the students' perspective as participants in the module and joint action researchers and authors;
2. the first author's perspective as module tutor and lead researcher.

Since my students were also quite properly co-authors, they did not have anonymity or confidentiality, but they did have a conference publication to add to their CV. All of them were given the opportunity to attend the CARN conference to co-present, and very pleasingly, one of the students took up this offer, did a fine job at the conference and has since gone on to forge a career as an academic.

Conclusion

When this research was carried out, there was no institutional requirement to gain ethics approval, and I wonder how this study would have fared if there had been. In the event, I still believe that the students benefited overall, not just in terms of the publication but also in terms of the desired raising of their learning awareness. Although there were big individual differences, all of them showed evidence in their reflective pieces of some noticeable insights along the way. Nevertheless, this might have been a much better study had I involved them more as truly collaborative researchers.

Reference

Norton, L., Aiyegbayo, O., Bhatti, N., de-Petro, V., Doyle, C., Matthews, K. and Parry, T. (2003) 'Action research and metacognitive awareness in postgraduate students'. Paper given at the Collaborative Action Research Network Conference, Knutsford, 7–9 November 2003.

Appendix 1

Example of a completed information sheet for research participants

Title of the research project

Personal development planning for first-year undergraduates: perceptions of what makes a 'really good student'.

Invitation

You are being invited to take part in this research project. Before you decide whether to accept or decline, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and ask if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

The University has designed the Personal Development Planning (PDP) module to help students in their first year adapt to the demands of doing a degree. As part of this work, we are now interested in finding out what students themselves think makes 'a really good student'. We also want to analyse if and how students' perceptions of themselves as learners change during the course of their first year in higher education.

Why have I been chosen?

We are asking all first-year students taking PDP if they will take part in this research to give us a better understanding of the first year student experience.

Do I have to take part?

No. It is entirely up to you to decide whether or not to take part. The research will use an electronic form that will be analysed by two researchers. This means your lecturers will never know whether you decided to take part or not, so it will not affect your study or academic progression in any way. If you do decide to

take part you will be given this information sheet to keep and asked to sign a consent form. If you do take part, you are still free to withdraw at any time up to the publication date for this research. You can also ask that any information you have already given in the study is destroyed. You do not need to give a reason for this or for your withdrawal.

What will happen to me if I take part?

In the third week of term, you will be asked to fill in a simple inventory that is available electronically. This asks you to think of up to five qualities that you think best describes a 'really good student' at university. You will then be asked to rate yourself on each of these qualities. It is always hard to give an accurate estimate of how long it will take to complete an inventory like this, but most students who have done this in the past have taken about 30 minutes.

Three weeks before the end of the academic year, we will ask you to complete another inventory and rate yourself, using the same process as before. We will then ask you to look at your original inventory and rate yourself again on the original qualities that you thought of. This second stage will take a little longer but should not be more than 45 minutes.

What are the possible benefits of taking part?

We hope that taking part in the study will help you to understand more about yourself as a learner than you did before (known as meta-learning awareness). Research evidence so far suggests that students with a greater meta-learning awareness tend to be more adaptable when studying becomes more difficult. However, this cannot be guaranteed. The information we get from this study may help us to support future students in making a successful transition to university study.

What are the possible risks of taking part?

We cannot foresee any risks in this research, but it will take up some of your time, which you might otherwise have spent in studying.

Will my taking part in this study be kept confidential?

The results of this research will be presented in a seminar at the University, at learning and teaching conferences, and in a journal publication. You will never be identified in any of our findings but we will use the words you generate to describe the qualities of the 'really good student'.

Please note: It is a University ethics proviso that your confidentiality and anonymity cannot be assured if, during the research, it comes to light that you are involved in illegal or harmful behaviours which we may need to disclose to the appropriate authorities.

Contact for further information

If you would like any more information, please contact:

Lin Norton, principal researcher.

Address of institution:

Office telephone number:

Email:

Appendix J

Research consent form template

Title of research project:

Name of researcher:

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. Yes No

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. Yes No

3. I agree to take part in the above study. Yes No

Name of participant:

Signature:

Date:

Name of researcher:

Signature:

Date:

Appendix K

Example of an unsuccessful abstract that was submitted to a conference as a research paper

In this example, I reproduce an actual abstract that was submitted to an international conference. At the end, I comment in italics why I think it failed.

Abstract

Title: 'The role of personal development planning in enhancing effective learning in higher education'

Aim: This paper reports on a study being carried out in the context of a Year One Personal Development Planning (PDP) module delivered on a non-subject-specific basis at a university in the North West of England. The module incorporates action planning, reflectiveness and meta-learning and includes Meyer's (2000) Reflections on Learning Inventory (RoLI©) The study aims to explore students' perceptions of effective studying and to evaluate the effect of PDP on their awareness of meta-learning. It builds on a small pilot study using an open-ended measure called the Ideal***Inventory to capture students' views about what they think makes a good student. The main findings of this study showed some movement towards meta-learning awareness by the end of the PDP programme (Walters and Norton, 2004).

Method: First-year students have been asked to complete an on-line constructivist questionnaire which asks them to think of five qualities or abilities they think 'a really good learner' in higher education might have, together with the opposite dimension i.e. the 'not very good learner'. Students are required to rate themselves against their self-generated scales in semester one and again towards the end of semester two.

Outcomes: The data will be analyzed qualitatively using a process of reiterative content analysis and quantitatively to ascertain if there are any changes in students' self-ratings. Academic performance measures will also be related to self-ratings.

Significance: This large-scale study will offer a picture of students' perceptions of themselves as learners and their understanding of the concept of meta-learning

and how this relates to the success of their studies in the first year of their degree course. Implications of our findings and the usefulness of the 'really good learner' inventory will be discussed in the broader terms of enhancing student meta-learning, reflectiveness and success in higher education.

References

Meyer, J.H.F. (2000) 'An overview of the development and application of the Reflections on Learning Inventory (RoLI©)', Presentation at the RoLI© symposium Imperial College, London, September 2000.

Walters, D. and Norton, L. (2004) 'Personal Development Planning: Promoting Excellent Learning?' Paper presented at the HEA annual conference, University of Hertfordshire, 29 June–1 July, 2004.

*Comment: It is clear from this abstract that we had not yet collected the data, indeed we said this quite plainly in the extended summary, which was required in addition to the abstract. Another point that went against us was that we referred to the Ideal***Inventory but we did not make clear that this had a record of publications to give it respectability. In the event, the reviewing committee's decision was a wise one because this proposal was premature and as it happened, we did not get a large number of students completing both stages.*

Compare this abstract with the next one in Appendix L on a similar research topic: student meta-learning. This was submitted to the same conference, two years later and was successful.

Appendix L

Example of a successful abstract that was submitted to a conference as a research paper

Abstract

Title: Predicting which students might be academically at risk in higher education

Aim: This paper reports on findings from work in a university in the UK, using Meyer's (2000) Reflections on Learning Inventory (RoLI©) as part of a programme designed to enhance students' meta-learning awareness. The research aims to identify patterns from RoLI© scores that might predict which students would be successful and which might be at risk of failure in their studies.

Method: As part of a compulsory module on Personal Development Planning (PDP), all first-year students complete the RoLI© and then are given information on what their scores mean in the context of the expectations of studying for their main academic subjects. In 2002 and 2003, students were asked if they would be willing to submit their RoLI© scores for research purposes. Altogether 230 students from the 2002 cohort and 380 from the 2003 cohort submitted completed questionnaires, which were matched to the students' records for measures of academic performance, gender and age variables and details of subjects studied.

Outcomes: These data will be explored using factor analysis, multiple regression analysis and structural equation modelling to identify predictive patterns for students who do well and students who may need additional support. Methods of using the RoLI© as a 'diagnostic tool' will then be developed taking into account age, gender and subject, which will enable students at risk of failure to be targeted through institutional student support mechanisms. It will be equally important that if patterns are identified predicting success that this is conveyed to students, thus giving them advice, which is evidence-based.

Significance: The findings from this research will be discussed in the context of how understanding indicators of success and struggle can be used to build more effective learning environments.

References

Meyer, J.H.F. (2000) 'An overview of the development and application of the Reflections on Learning Inventory (RoLI)', Presentation at the RoLI symposium Imperial College, London September, 2000.

Comment: Although we were quite straightforward in saying that all the analyses had not been done at the time of writing this abstract, it was clear that we had data from over 600 questionnaires. We also used an established and recognized research tool to collect our data.

This abstract was accepted and the paper duly given:

Norton, L.S. & Norton, J.C.W. (2005) 'Predicting which students might be academically at risk in higher education'. Paper presented at the 11th Conference of EARLI, Nicosia, Cyprus, 23–26 August 2005.

Appendix M

Illustration of a fictionalized cover letter to the editor when submitting a manuscript for consideration as a journal publication

Dear Professor/Dr ..... (Make sure you know the name of the latest editor.)

We wish to submit an original research article 'Enhancing statistics students' critical thinking skills using a Wiki' by Maureen Lombard and Michael Mantoni.

We would be grateful if you would consider this for publication in your journal: *Pedagogical Action Research in Mathematics Teaching*. The significance of this research is that it reports on an innovative use of technology to enhance students' understanding of statistics. In adopting an action research methodology, we believe it fits the aim and scope of the journal and will be of interest to readers interested in technology-enhanced learning.

As first author, I will handle all correspondence and can be reached as follows:

Dr Maureen Lombard	Telephone:
Postal address	Email:
Department of Applied Statistics	Mobile:
University of . . .	Fax:

Thank you for considering this submitted manuscript.

Yours sincerely,

Maureen Lombard

Appendix N

Illustration of a fictionalized cover letter to the journal editor accompanying a revised manuscript

Dear. . .

I am sending you three copies of our amended manuscript as requested, plus an electronic copy in Word. I have also enclosed a separate sheet detailing our responses to both referees' comments and criticisms. As you will see, we have paid very careful attention to them and have found their suggestions to be extremely helpful. We feel that the paper is now better as a result. I would be grateful if you would pass on our appreciation.

[Sometimes authors prefer to put an acknowledgment in their paper if the suggestions have been particularly useful.]

I hope that this amended manuscript will now be suitable for publication and I look forward to hearing from you.

Yours sincerely,

Dr Maureen Lombard

Department of Applied Statistics

University of . . .

Appendix O

Example of a real response to reviewers' comments on a submitted manuscript for journal publication

	Reviewers' comments	*Authors' responses*	*Location in mss*
1.	**The problem of student attrition (Referee 1 and 2).** Both referees point out that the fall in student numbers was the main problem, although out of our control. They suggest that following up the non-attenders would have been useful.	We have acknowledged this problem more fully and reported some anecdotal evidence why students did not attend.	p.21 and pp.26–27
2.	**Comment: Analysis of the ASI scores (Referee 1).** The referee suggests that ANOVAs would be more appropriate than sequences of t-tests and that that one-tailed tests are not fully justified in the introduction.	The data have been completely re-analyzed using two-tailed three-way ANOVAs with two repeated measures, looking firstly at the overall sample (i.e. all those for whom we had pre- and post-ASI scores) and then looking at only those students categorized as consistent attenders of the interventions.	pp.12–14
3.	**Inter-rater reliability (Referee 1).** The referee says that the inter-rater reliability is low.	Inter rater-reliability on the conceptions of learning transcripts was actually 75% for the pre-course measure and 79% for the post-course measure for the APL students, and 76% for the first attempt and 64% for the second attempt for the university students who had no intervention. This was not entirely clear in the manuscript but has now been clarified. We acknowledge that the 64% is a little low but it still falls within the acceptable rate.	p.11

(*Continued*)

(Cont.)

	Reviewers' comments	*Authors' responses*	*Location in mss*
4.	**Academic performance (Referee 1).** The referee says that the logic of the comparison between attenders and non-attenders hardly allows test improvement to be ascribed to the effect of the teaching. Attenders are different in all sorts of ways (correlated with wanting to attend such courses). Pinning down the specific skills input needs a more sophisticated comparison.	We have taken account of this point by drawing out more the distinction between the APL results where there was a benefit and the ISR results where there was no benefit for attenders, which suggests it is the course rather than the characteristics of attenders which is causing the effect.	pp.18–19
5.	**Nature of the interventions (Referee 1 and 2).** The referees suggest that more needs to be said about the difference between these two learning interventions and their conceptual basis.	We feel that the differences have already been clearly set out, but we have added an extra paragraph to summarize the main conceptual differences between the two courses.	pp.7–8

Note: In this real example from the late 1990s, it can be seen how we responded respectfully to all the comments. It is usually a good idea to do what has been asked rather than take issue with the reviewers, but where we didn't agree or thought that something had been missed in the ms we gave a justification (see comment 5). The revised manuscript was accepted for publication.

Appendix P

Example of a budget for a fictionalized internally funded research bid

Staffing	*Total Hours*	*Hourly Rate*	*Cost*
(i) Teaching cover for the lead researcher for supervision of research assistant (one hour per week) and time to write up the study as a journal publication	30	£38*	£1,140.00
(ii) Research Assistant 15 hrs for designing and trialling questionnaire; 70 hrs for content analyzing pupils' notes and scoring questionnaires; 35 hrs for entering data on computer spreadsheet and analyzing data)	120	£14.05*	£1,686.00
(iii) Admin support	-	-	-
TOTAL STAFFING COSTS * Includes allowance for 'on costs' (e.g. National Insurance)			**£2,826.00**

Resources	**Cost**
(i) Consumable materials (please specify)	-
(ii) Equipment (please specify)	-
(iii) Photocopying 2,000 questionnaires (4 pages at 3p = 12p)	£240.00
(iv) Other (please specify) Qualitative Software licence for research assistant	£295.00
TOTAL RESOURCES	**£535.00**

(*Continued*)

(Cont.)

Travel and subsistence	**Cost**
(i) Travel (please specify) Train travel for 2 return trips (London to Liverpool and return) for researcher and research assistant from Liverpool to London for 3 meetings with collaborators. Based on off-peak return train fares (£57.00)	£342.00
(ii) Subsistence (please specify)	-
TOTAL TRAVEL and SUBSISTENCE	**£342.00**
Other	**Cost**
Please list: 10 inter-library loan photocopies of relevant research articles at the full rate of £7.50 each	£75.00
TOTAL OTHER	**£75.00**
TOTAL FUNDING REQUESTED	**£3,778.00**

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