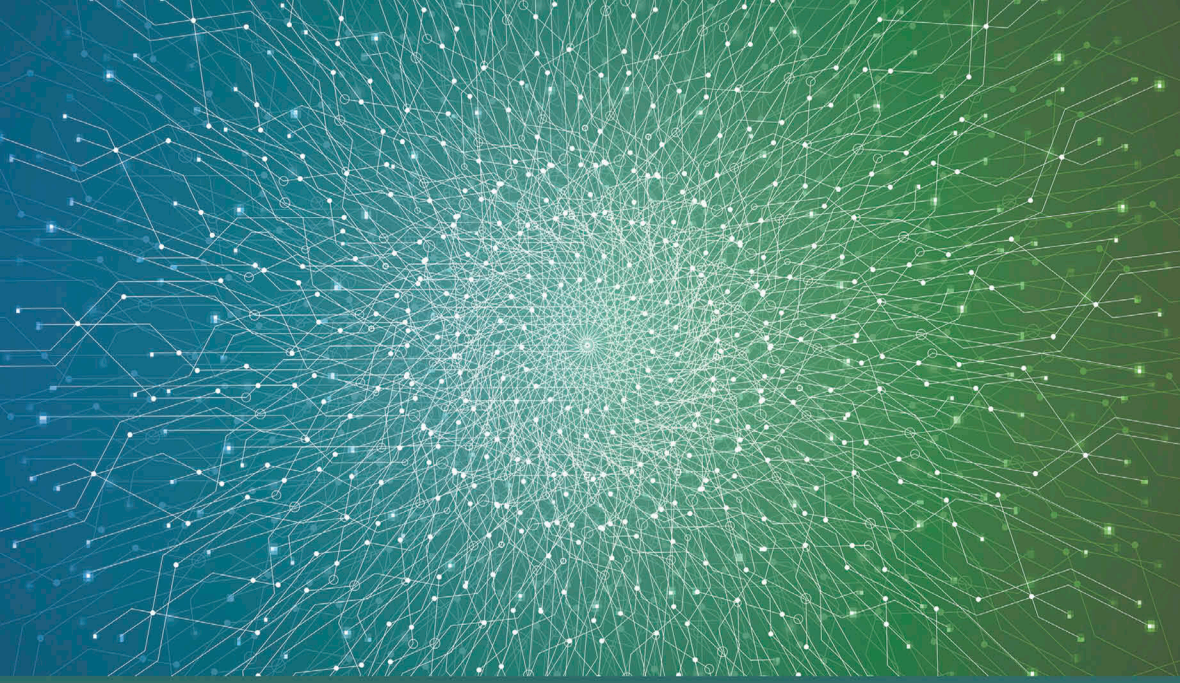

SUCCESSFUL RESEARCH SUPERVISION

ADVISING STUDENTS DOING RESEARCH

2ND EDITION

ANNE LEE

eRESOURCES

ROUTLEDGE

1st edition

A fabulous resource for graduate advisors.

Professor Eric Mazur, Harvard University

2nd edition

Anne's commitment to supporting supervisors is evident from this comprehensive guide.

Gill Houston, Chair,
UK Council for Graduate Education

Whether you're new to research supervision or an old hand, have a difficult student or simply want to update your supervisory skills, Anne Lee's comprehensive and easy to use book on supervision is for you. It offers advice on a variety of pedagogic approaches to supervising, suggests ways of strengthening student acculturation and developing critical thinking, helps you build strong supervisor/student relationships, including constructive co-supervision, encourages support for academic literacy, deals with ethical dilemmas and provides strategies for student empowerment. It will not only answer all your questions about supervision, it will also make the supervisory process much more productive.

Professor Rosemary Deem,
Royal Holloway, University of London

Essential reading for postgraduate supervisors as they steer tomorrow's researchers through their doctoral studies.

Professor Alistair McCulloch,
University of Southern Australia

Anne Lee is a pioneer in the academic and professional exploration of research supervision. She has helped countless supervisors hone their skills and many more students understand the value of supervision. Notably, Anne has provided much needed definitional and theoretical clarity and her model is the dominant framework for understanding both the supervisory role and relationship. Her experience and wisdom are now available in the 2nd edition of this book, which now includes a separate guide for students. I am excited to use both in my own supervisory practice.

Bruce Christensen,
Australian National University

A treasure trove of practical advice.

Anna Gannon, University of Cambridge

Successful Research Supervision

Successful Research Supervision offers a research-based practical framework for academics to examine and develop their effectiveness as research supervisors. Underpinned by practical and current research and focusing on the effective techniques needed to thrive as a supervisor, the second edition is fully updated, providing a go-to guide for both novice and more experienced supervisors.

With new sections examining ethical procedures, the use of social media to gather data and promote research, supporting academic writing and co-supervision, this book guides readers from the initial steps to managing a project through to successful completion.

This book will help academics to:

- expand a repertoire of actions and responses, giving the flexibility to meet different situations with ease and confidence
- understand the influence of value and experiences in the choice of approach to research students
- be able to choose the most appropriate combination of approaches for a particular curriculum or project
- employ a neutral language for developing and assisting others.

By identifying the optimum combination of approaches to best fit individuals, *Successful Research Supervision* helps supervisors to move their students towards the ultimate goal of being able to study independently in a thoughtful, coherent and efficient manner. This book is crucial reading for all supervisors looking to improve their practice.

This is the companion guide to *Successful Research Projects*, a comprehensive and accessible guide for busy students facing postgraduate research projects. It covers the key questions, challenges and solutions and helps identify important goals and solve problems associated with research projects.

Anne Lee is an independent academic. She is an Honorary Research Fellow at the University of Bristol, UK and was Associate Professor at the University of Stavanger, Norway. Find out more about her work at www.drannelee.wordpress.com

Successful Research Supervision

Advising Students Doing Research

2nd edition

Anne Lee

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This book is dedicated to Joanna, Jonathan and Tony

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Preface

This second edition of *Successful Research Supervision* has been updated and extended. It includes new sections on supervising academic writing, careers advice, and assessment and examination as well as updating the reader on the recent research that has been undertaken on the five approaches, which still form the core of the book.

It offers a research-based practical framework for academics to be able to examine and further develop their effectiveness as research supervisors. It draws on work from across and between all disciplines and is used by scientists, supervisors working in the arts and humanities, health care, social sciences and on multi-disciplinary projects.

Research supervisors working in all levels of higher education must ensure that their students gain efficiencies from working as part of an effective cohort and develop high levels of criticality and interdisciplinary thought. To impart these disciplines is essential for any supervisor. From helping researchers to begin, to managing a project, through to successful completion, this book guides the reader through a series of exercises to identify their individual strengths and weaknesses. It then provides theoretically sound advice in a practical and easy-to-use format.

Successful research supervision is full of examples of the best practice from outstanding scientists, social scientists and humanities supervisors from across the world.

This book will encourage and help academics to:

- expand their own repertoire and array of actions and responses, thus giving them the flexibility to meet different situations with ease and confidence
- identify the optimum combination of approaches to best fit individual students
- understand the influence of their own values and experiences in the choice of their approach to research students
- choose the most appropriate combination of approaches for a particular curriculum or project
- employ a neutral language for developing and assisting others.

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The University of Stavanger employed me as Programme Leader for their three-module residential supervisory development programme for several years. The support from various excellent administrators contributed substantially to the professionalism and evolution of this programme. The opportunity to work in depth with supervisors from various universities across Norway has been a delight. The University of Stavanger also supported a new programme for the developers of supervisors (for want of a better term we called it 'Training the Trainers') and particular thanks are also due to Robert Radu who has helped to pioneer this programme on the national and international stage.

From Sweden there has been constant inspiration, both within the country and in the initiatives they have led and I have participated in across Africa. Cecilia Almlov's ability to facilitate seemingly impossible tasks should be legendary.

I would like to particularly acknowledge the contributions made to the development of the questionnaire by academics from Norway: Shaher Shalfawi from the University of Stavanger and Tor-Ivar Karlsen and his team from the University of Agder. Their interest in the subject has been both helpful and encouraging. We all recognise that there is much more that could be done but steps are being taken in the right direction.

This work began years ago at the University of Surrey. I am deeply grateful to staff and students there. To all the academics that I have worked with at universities and institutes in the UK, Eire, Scandinavia, mainland Europe, the Middle East and Africa – you have critiqued, extended and examined the thoughts behind this book. Thank you.

Permission to use the RDF was granted by Jen Reynolds of Vitae.ac.uk, and I am grateful to Vitae.ac.uk for involving me in the early stages of its development and for the permission to reproduce the diagrams in Chapter 10. For further information please see www.vitae.ac.uk/rdf

My aim has been to make this book, and its companion (Successful Research Projects: A postgraduates guide), as complete a resource as possible. So I am grateful to Taylor and Francis for granting permission for me to include work from the following previously published sources: Lee, A. 'Setting up frameworks' (Chapter 4) and 'Five approaches to supporting students' writing in English as am Additional Language' (Chapter 13), in Carter, S. and Laurs, D. (Eds.) (2018) *Developing research writing*, Routledge: Abingdon; Lee, A. (Chapter 1, Chapter 9) in Carter, S. and Laurs, D. (2014) *Developing generic support for doctoral supervisors*, Routledge: Abingdon; Lee, A. & Murray, R. (2015) Supervising writing: Helping postgraduate students develop as researchers, *Innovations in Education and Teaching International*, 52(5), 558–570; and Lee, A. (2018) How can we develop supervisors for the modern doctorate? *Studies in Higher Education*, 43(5), 878–890.

A note on terminology

Words that are used interchangeably

Advisor or supervisor?

The terms 'supervisor', 'academic' and 'advisor' are used interchangeably in this book. In North America the term 'advisor' is more common; in the UK and Australia 'supervisor' is generally used.

Doctoral candidate, early career researcher or research student?

A doctoral candidate in Europe is often called an 'early career researcher' (ECR) – an important statement about identity and one possible career trajectory. In other countries the term 'Early Career Researcher' refers to the student who has already been awarded their PhD (the post-doc). In this book the terms 'research student', 'researcher' and 'ECR' are used interchangeably to refer to someone doing postgraduate research at either master's or doctoral level and in some cases the principles can apply to a student undertaking an ambitious research project at undergraduate level. Post-docs are often involved in some supervision of students doing research, so they will also have an interest in this book.

Dissertation or thesis?

In the UK 'dissertation' is usually applied to an extensive piece of research submitted for a master's or undergraduate degree. 'Thesis' is used to describe a monograph, or an extended piece of research at PhD level. The terms 'dissertation' and 'thesis' are used to describe exactly the opposite levels of research in higher education in the USA and elsewhere. In this book, both terms are used to describe an extended and rigorous piece of original research.

Mentoring or coaching?

Mentoring in this book is used to describe a holistic process, largely non-directive facilitation. Coaching is more skills based, where the coach has a good idea of the expertise that needs to be mastered. So 'mentoring' might include helping to find a range of options for careers, whereas 'coaching' might refer to help with using a particular piece of equipment for an experiment.

Abbreviations

CGS	Council for Graduate Schools (US)
EAL	English as an Additional Language
EdD	Doctorate of Education
EHEA	European Higher Education Area
EngD	Doctorate in Engineering
EUA	European Universities Association
MOOC	Massive Online Open Course
OECD	Organisation for Economic Co-operation and Development
PRIDE	Association of Professionals in Doctoral Education
PsyD	Doctorate in Psychology
QAA	UK Quality Assurance Agency
SEDA	Staff Education and Development Association (a UK-based professional association)
SOTL	Scholarship of Teaching and Learning
SRHE	Society for Research in Higher Education
UKCGE	United Kingdom Council for Graduate Education

Chapter 1

Tomorrow's supervisor

A good supervisor is one who knows how to productively manage the inevitable tensions that arise between people, the research itself and institutional objectives. The objective of this book is to enable you to thrive while doing that and, most importantly, to enjoy the whole process.

The framework that underpins this book seeks to support supervisors of postgraduates doing research by explaining the different approaches that you can choose from and blend in order to be successful. I created it from an iterative research study looking at the behaviours and beliefs of effective supervisors and their postgraduate students, interpreted through a wide literature review. It can explain why your students are pulling in certain directions or asking particular questions and help you identify what might keep them motivated and enhance the quality of their work. From extensive research with successful postgraduate students and their supervisors, I have identified five conceptual ways of looking at supervision. Once you have understood these you will have access to an approach to problem solving that you can use both for supervising research and for managing other life projects.

How to use this book

An academic who supervises students doing research might want to use this book for several reasons. Pragmatically, it will enable them to expand their own repertoire and mix of actions and responses, and thus be more flexible to meet different situations. After reading it, they will understand more deeply how their preferred approach to working with research students is influenced by their own values and experiences and they will have a neutral language for discussions with fellow academics and co-supervisors about how roles and responsibilities will be shared. Mastering the different aspects of the framework proposed here will enable them to choose the most appropriate combination of approaches for a particular context, problem or time.

This second edition introduces a companion volume for students, *Successful Research Projects*, which supervisors might find useful to recommend to their candidates. The companion volume mirrors the structure of this book and

looks at the framework from the researching student's point of view. It helps the student to plan their project, to work out how best to use their supervisor's time and offers suggestions for finding other sources of help and support. In my experience there is only one time when I would offer different advice to supervisors and students – and that is when the question 'How do I cope with conflicting advice from supervisors?' is asked. This is a topic that we explore carefully in Chapter 13 of this book and Chapter 12 of the companion volume (Dilemmas: when you disagree with your supervisor(s)).

Institutionally, this framework can be used to evaluate the environment in which students are being asked to do research. It enables the exploration of answers to questions such as 'Is there a holistic approach to the student experience?' 'What ethical research practices are we implicitly and explicitly encouraging?' and 'How are we developing, managing and valuing our supervisors and advisors – the people who have the most direct impact on our students?'

Introducing students to research is an exciting part of academic work and many research supervisors have helped in the journey that this book describes. The original interviews to develop the framework were carried out with doctoral supervisors, but in my experience of working with master's and undergraduate students, the themes are applicable to all levels of higher education, and maybe beyond.

Aims of this book

1 To provide a research-based, scholarly approach to working with students doing research.
2 To offer a problem-solving tool for working with different students and the supervisory team.
3 To provide key terms for further study.
4 To prompt readers to think of avenues for the further development of themselves and their institutions.
5 Through this book and its companion volume *Successful Research Projects*, to introduce a neutral language that both supervisors, co-supervisors and students can use to deal with difficult situations that can arise during a research project.

The strategic supervisor

The opportunities arising from the way that research in universities is carried out are exciting, but sometimes they can also be confusing. It was simpler when research was carried out primarily to develop the skills required by the next generation of academics – to create academic capacity. That is still the case in some countries and in some disciplines, but other objectives have crept into the system. The result is that academics who supervise research first need

to ask themselves several questions to work out how they fit this part of their work into their own career plan.

Three key questions are:

1 Do I have an overall, long-term objective for the research that I would like to see carried out in my field?
2 Is my primary objective to help to create an independent researcher(s) or to get an excellent piece of research done?
3 Does my employer value particular types of research projects more than others? What are the important outputs for them?

In order to be able to fully answer these questions the research supervisor needs to review all the opportunities available. Let's explore these three questions further.

In interviews with successful researchers it became apparent that leading academics had a clear vision of the overall field they wanted to explore from quite an early stage in their career. They might want to focus broadly for example on a particular question in physics, a genre in literature or a medical application for materials science, and they would consider every opportunity for making a grant application in the light of any aspect of that question. This proactive approach to their own work and to their careers had a concomitant knock-on effect for their students.

Undergraduates would be guided to do literature searches in particular areas, master's students (or Second Cycle in terms of the European Higher Education Area (EHEA) 2018 framework) would be guided to repeat or extend certain experiments and these same academics would frequently be advertising salaried posts for doctoral research (Third Cycle) where the research question was already well defined. In this situation, the freedom for a student to define and explore a topic of their own choice is, of course, limited. However that same student will probably find it easier to know what literature needs to be consulted and learn the techniques required to carry out research.

The second question is also a very personal one for the supervisor to answer, and it has a particular resonance at doctoral level. For some academics, it is vital that the research is excellent, the articles and artefacts are brilliant. For others, often operating from a humanistic and student-centred approach, the most important thing is not the quality of the research or the written final product. The most important thing for this supervisor is that when they graduate their student will be an ethical, competent, independent researcher. The final product has to be 'good enough', but is not necessarily perfect. It will normally acknowledge its limitations. The researcher, however, has to be completely trustworthy. Of course, most supervisors will seek excellence in both aspects, but the type of comments they make during supervision sessions and in team meetings may divulge their ultimate concern. The supervisor who corrects work without really explaining why they have done so might be more

concerned with the final product, whereas the academic who uses problems and failures as opportunities for learning is likely to be more concerned with developing the individual's potential. Are these two perspectives mutually exclusive? Not necessarily, except when there are time pressures – and we know that in practice meeting deadlines is a major and increasing concern.

The third question leads to understanding the fit between the research programme, the supervisor and the institution. The strategic academic will either try to influence their institution's strategic objectives, or will organise their work so that it fits them. A university which says it is seeking to answer 'the grand challenges' will inevitably be looking at cross-disciplinary research teams. Another university might be seeking to 'maximise employability or see their research applied in practice' so liaison with industry and employers will be paramount. In much of the Western world metrics have become important, so universities are measured on the quality and number of their published articles, the quality of their teaching, their ability to win substantial grants or liaise with and lead regional partnerships. Traditionally, a university will have a reputation for some disciplinary areas of excellence and then one or more of the above objectives will come into play. Recently, however, there has been another imperative also coming into focus – are our students (and staff) flourishing? Can we say that the mental health, physical health and well-being needs of our students are being properly met? The reputation of any institution is vital, and if it is threatened in any way, protecting it becomes a major concern.

The problem with over-interpreting our work to meet any of these types of institutional objectives is that strategies can alter, government policies can lead to substantial changes in the direction of research funding and key personnel (especially people inhabiting the roles of Rector or Deputy Vice Chancellor (Research)) can move institutions, thus altering a hitherto taken-for-granted perspective. While working in an institution where one can support shorter-term strategic objectives is a useful tactic, it is also wise to look beyond this to see how and where one's research can contribute fundamentally to society's needs, and to keep arguing that case.

How does research differ at different levels of the curriculum?

Students have undertaken a wide range of research projects, often with the aim of encouraging independent investigation and fostering a deep engagement with learning. University students might have encountered varying levels of sophistication in what has been demanded of them. Some university academics have been involved in conducting vivas for research projects in schools where a dissertation of some 3,500 words, fully referenced, has been examined. While this work might be mainly descriptive, it is also true that it can lay a solid foundation for and interest in conducting research later in life. These initiatives are to be encouraged.

Within universities over the last ten years there has been a quiet revolution encouraging research-based initiatives at all levels of the curriculum. In the UK it was spearheaded by Mike Healey who collected together the most comprehensive set of case studies of research projects that have been undertaken at undergraduate level (Healey & Jenkins, 2009). They identified four main approaches:

- research-led: learning about current research;
- research-oriented: developing research skills and techniques;
- research-based: undertaking research and inquiry;
- research-tutored: engaging in research discussions.

(Healey & Jenkins, 2009, p. 6)

This was followed most notably by Dilly Fung who published a university-wide approach pioneered at University College London called 'A Connected Curriculum'. In it she argues that research and teaching need to be connected with each other and to the wider world in order to make higher education more relevant and thus energise both students and academia. She also argues that research and enquiry need to be structured into the curriculum at every level. This is an approach to education that chimes with the European concept of 'Bildung', where education is about valuing the humanity and rights of others (Fung, 2017, p. 15).

Where are these two issues – a practical approach to introducing research and enquiry into the curriculum, and an ambition to value and encourage the ethical creation of knowledge – brought together? Essentially, it is in the role of the supervisor.

There are many excellent national frameworks of higher education (see examples for Ireland, https://www.qqi.ie/Articles/Pages/National-Framework-of-Qualifications-(NFQ).aspx; UK, https://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf (2014); Norway, https://www.nokut.no/en/norwegian-education/the-norwegian-qualifications-framework-for-lifelong-learning/; and Australia https://www.aqf.edu.au/aqf-levels) and it is worth delving into them all to see if they have examples that meet your disciplinary needs. Perhaps the most commonly used one was originally devised at Bologna and has been adopted by the European Higher Education Area. In the adaptation created for Table 1.1 we can see some differences between the different levels of the curriculum laid out next to each other. Here we can see that the first section for each level of knowledge relates to the level of understanding of knowledge that is required; the second section relates to the ability to continue their learning; the third section relates to the student's ability to communicate that knowledge. The EHEA Framework (EUA, 2018) is the set of descriptors that covers the widest higher education area, so that is what is referred to in the following three sections and summarised in Table 1.1.

Table 1.1 Adaptation from the EHEA Qualifications Framework (2018)

First Cycle (BA Hons)	Second Cycle (Masters)	Third Cycle (PhD)
KNOWLEDGE	**KNOWLEDGE**	**KNOWLEDGE**
Students: • have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study • can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study • have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues	Students: • have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context • can apply their knowledge and understanding, and problem-solving abilities in new or unfamiliar. environments within broader (or multidisciplinary) contexts related to their field of study • have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, including reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements	Students: • have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field • have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity • have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication • are capable of critical analysis, evaluation and synthesis of new and complex ideas

COMMUNICATION	**COMMUNICATION**	**COMMUNICATION**
• can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences	• can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously	• can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise
CONTINUOUS LEARNING	**CONTINUOUS LEARNING**	**CONTINUOUS LEARNING**
• have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.	• have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.	• can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge-based society.
Normally includes 180–240 ECTS credits	*Normally carries 90–120 ECTS credits – the minimum requirements should amount to 60 ECTS credits at the Second Cycle level*	*ECTS credits not specified*

Source: www.ehea.info/media.ehea.info/file/2018_Paris/77/8/EHEAParis2018_Communique_AppendixIII_952778.pdf

Research at undergraduate level

The First Cycle of the EHEA Framework is equivalent to bachelor's/undergraduate degrees. According to the generic learning outcomes, the student at this level is expected to have some knowledge that will be informed by the forefront of the field of study. This goal could be met by engaging students with research projects or by contact with research-led teaching. They also need to demonstrate they can apply their knowledge and understanding in a professional manner, solve problems through study and communicate information to both specialist and non-specialist audiences. Major reference works on this level of study have been compiled by Healey and Jenkins (2009) and Healey, Lannin, Stibbe and Derounian (2013). There is comprehensive advice available on preparing undergraduates to undertake these projects, supervising and assessing them.

Research at master's level

The Second Cycle of the EHEA Framework is equivalent to master's degrees. It explicitly says that it looks for originality in developing and/or applying ideas, often within a research context. Most master's programmes include a substantial research project so that students can demonstrate that they can apply knowledge, understanding and problem-solving abilities in new or unfamiliar environments. There is also an explicit requirement to reflect on social and ethical responsibilities.

Research at the doctoral level

The Third Cycle relates to doctoral education and, of course, its heart is the research. Interestingly, although in Chapter 5 there are figures showing the 'long thin' and the 'funnel' PhDs (the latter requiring a mastery of a wider field of knowledge within the discipline than the former, see Figure 5.1), in the EHEA qualification descriptors there is a statement saying that mastery of the field is expected – how 'the field' is bounded is a matter for discussion between the supervisor and researcher, bearing in mind any institutional or national guidelines. Candidates are expected to have made a contribution through original research and be capable of critical analysis, evaluation and synthesis of new and complex ideas.

The learning outcomes in the EHEA Framework (see Table 1.1) are necessarily generic, but they are also a very useful starting point. There are also discipline-specific frameworks published by various professional bodies (for example, the Engineering Council in the UK) which need to be explored. Supervisors will find it useful to test themselves against these guidelines by asking the following question: 'How can I explain what a student will learn and achieve by doing a research project with me at each of these curriculum levels?'

The evolution of the doctorate from being primarily a licence to teach in the Middle Ages, through its part in the nineteenth-century university as a centre of research, to the more homogenised and capitalised product that we have today has been well charted (Taylor, Kiley & Humphrey, 2018). The clever supervisor recognises that the formalisation of the doctorate, leading to larger numbers of students and metrics measuring the number of successful completions on time will inevitably impact on institutional expectations of them, but the clever academic also seizes every new opportunity to maximise their chances of supervising the type of research they truly want to undertake.

The role of the modern doctorate

What is a modern doctorate and who undertakes this qualification? Fillery-Travis et al. (2017) have summarised the literature surrounding this phenomena and emphasised it as a transformational process that embeds notions of employability outside academia. They argue that the traditional doctorate is too narrow. Arguably, the modern doctorate challenges traditional PhD education because it focuses on knowledge transfer as well as knowledge creation (Muller, 2009), it includes the professional doctorate where the focus is on practice, but is not restricted to that, and allows research methods that other programmes might deem unacceptable such as action research (Armsby, Costley & Cranfield, 2017). It might generate a licence to practise professionally, for example the Psych D. Sometimes it will consider alternative forms of presentation to a straightforward thesis and therefore might also include some doctoral programmes in creative practice where the principal item for assessment could be an artefact such as a musical composition, work of art or film. The survey data for the Erasmus project 'Superprofdoc', discussed later in this book, supports earlier work describing the demographic of those who undertake the modern doctorate as including more experienced, part-time, mature students (Hutchings, 2017).

Professional doctorates often have substantial taught components. This is a pattern that already exists in American and Scandinavian PhD programmes and is transferring to many UK-based doctoral programmes. In the UK funders have moved to encourage the creation of doctoral training centres or doctoral training partnerships, programmes of work which cross traditional boundaries. As part of their bids for funding, universities often have to demonstrate what training will be available for research students, and how this is going to be made available to the wider community. This move to 'leverage up', alongside the pressure to offer generic skills training (see Chapter 14) on topics such as project management, academic writing and personal development, can create or enhance the development of a cohort of research students. Students doing research at bachelor's or master's level suffer much less from the isolation that can be found when researching at a doctoral level. Supervising students doing research in groups can offer important

opportunities to overcome isolation (Hutchings, 2017). This is explored more in Chapter 5 on enculturation. Taught programmes at doctoral level can be a great help both to supervisors (who then do not have to explain the same things repeatedly to individual students), but may also be seen as a nuisance (it is sometimes argued that they take a student away from the more vital, essential technical aspects of research).

The institution's role in building a supportive research environment

Recent research at the University of Bristol (Whittington, Barnes & Lee, 2018) has sought to identify how we can best support supervisors and demonstrates that issues such as institutional expectations, regulations, requirements and recruitment plans have an influence (and sometimes unintended consequences) that need to be carefully explored. Supervisors need to know exactly what procedural regulations have to be followed and what avenues there are for dealing with difficulties that can arise. Regulations must be appropriate, but in practice we found that they are also often changing. How easy is it for a supervisor to keep up with these changes? In some universities academic staff must undertake an annual programme updating their skills and knowledge; in others there is no such provision available and ferreting out the relevant regulations is a task in itself.

Recruitment of students and matching supervisors with students is another difficult issue. In some universities supervisors are always consulted about whether or not they are willing to take on a research student; in many others a refusal will run the risk of offending. Some Norwegian universities have tried to separate the selection of students from the allocation of supervisors to prevent bias in recruitment. This is less of a problem in American-type programmes where all students will take taught courses first. There is then an opportunity for academic staff and students to get to know each other before one-to-one or small group supervision for a dissertation begins, but it can create a problem if supervisors feel forced to take on students in whose projects they feel little interest. The number of research students an academic is allowed to take on is a difficult issue to make guidelines for. In some institutions supervising research students is a highly prized activity: it increases the likelihood of publications emerging, it provides research labour and it gives the academic supervisor a workload allowance (or relief from other teaching or administrative duties). In other universities (and disciplines), it would be unseemly to have a supervisor's name as a co-author on a paper and there is no concept of workload allowance. Every university needs to ask itself what the outcomes of any guidelines are likely to be.

A model describing the impact of various internal and external forces on a supervisor's behaviour has been created by Kate Whittington as a result of the research with experienced supervisors at the University of Bristol. In this more

detailed model we can see that there are intrinsic factors but external influences on a supervisor's behaviour include funders' requirements, institutional guidelines, workload pressures, disciplinary, departmental and student expectations. The training and development that is available for academics also has an impact, but the model emphasises that this cannot be taken in isolation. More internal influences include our own experience of being supervised, personality and preferences. Gender, cultural expectations, career objectives, and national and international political imperatives also need to be taken into consideration.

All of these inputs will affect the potential outputs in various and not always predictable ways. Common metrics used are the numbers of publications and quality of journals used, citations, research grants, completion rates and student feedback. Less commonly measured (and less amenable to being measured), but very important elements are reputational issues arising from student and staff well-being (Leveque, Anseel, De Beuckelaer, Van der Heyden & Gisle, 2017), the presence or absence of conflict and complaints, and the contribution to local or national life.

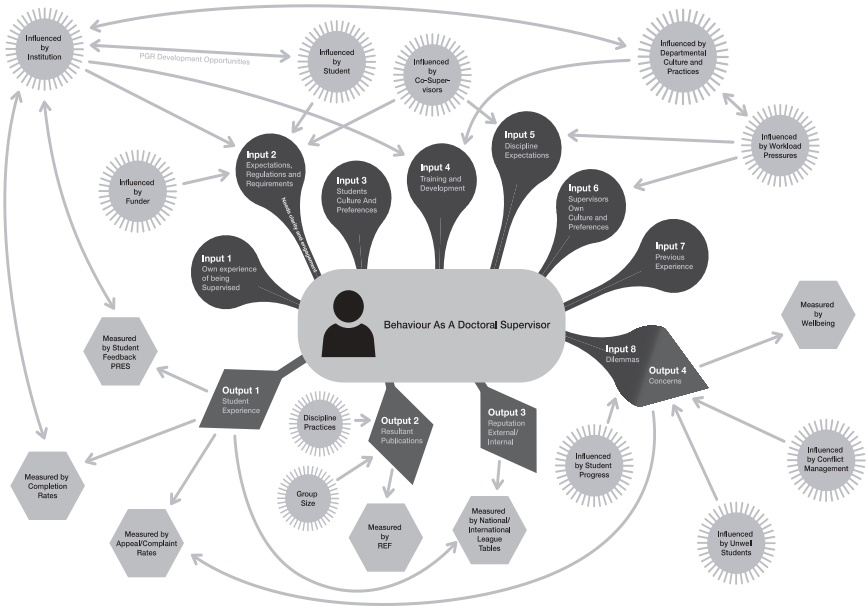
A close analysis of the figure, and noting what is missing from the experienced supervisors' observations, might help to answer the following three questions.

1 What needs to change?
2 What can a supervisor themselves influence to bring about change?
3 What can an institution influence to bring about change?

The research within the University of Bristol also demonstrated the profound effect that the culture within a faculty, school or department can have. In some areas 'supervisor lunches' are frequently held, where informal learning communities already exist. In other universities or departments it might be seen as a sign of great weakness for an academic member of staff to admit that they were finding it difficult to handle a particular student or research group. The role of the academic in charge of research education can be pivotal, and we need to establish whether it is seen as a purely administrative task or something much more supportive and developmental.

Thus we can only expect supervisor development activities to influence certain elements of supervision. They can increase self and cultural awareness, inform procedures and good practice and provide a toolkit for solving certain types of dilemmas.

The development of supervisors is a relatively new area of academic staff development, and the responsibility for managing this provision (if it exists at all) moves (sometimes uneasily) between different parts of the university's organisation: individual schools, educational/academic development centres, a director of research, research student support and human resource management. (This is explored more in Chapter 14.)



2017–2018

The model was developed through:

- maximum variation sampling of a wide range of experienced supervisors
- six focus groups of six to ten experienced supervisors from different disciplines
- one focus group of 11 volunteer students
- data analysis – inductive – coding – sensitising concepts.

2018–2019

We have recruited supervisors into learning communities (approx. eight per community)

Running three sessions for communities on core themes identified by focus groups:

- well-being and mental health
- progress
- conflict.

Each session begins with a short presentation by a speaker who has in-depth knowledge of the specific topic.

The presentations are followed by discussions of specific case studies.

Figure 1.1 Identifying the components of excellent doctoral supervision: creating an inclusive experience for the doctoral candidate (Whittington, K., Barnes, S. & Lee, A., Paper presented at SRHE, December 2018)