

CONFIDENT SUPERVISORS

CREATING INDEPENDENT RESEARCHERS



EDITED BY SUSAN GASSON JILLIAN BLACKER IAN STOODLEY
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Confident Supervisors: Creating Independent Researchers

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James Cook University



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ACKNOWLEDGEMENT OF COUNTRY






At James Cook University we acknowledge with respect the Aboriginal and Torres Strait Islander peoples as the first peoples, educators and innovators of this country. We acknowledge that Country was never ceded, and value the accumulation of knowledge and traditions that reflect the wisdom of ancestral lines going back some 60,000 years, and recognise the significance of this in the ways that Aboriginal and Torres Strait Islander peoples are custodians of Country. As a University, we will continue to learn ways to care for and be responsible for Country, and we will collectively seek to build a future that is based on truth-telling, mutual understanding, hope, empowerment, and self-determination.



Kassandra Savage (JCU Alumni), 'Coming Together and Respecting Difference', acrylic on canvas, 2014, 90cm x 90cm. © Kassandra Savage, reproduced with permission of the artist




ABOUT THE AUTHORS AND EDITORS

Editorial Team


	<p>Susan Gasson</p> <p>Susan's research focuses on research education and development, research collaboration, and employability. Adopting qualitative approaches including narrative inquiry her research has benefited from years spent working in higher education, and building strong national and global networks. She held the role of Coordinator HDR Advisor Development, Graduate Research School, James Cook University while writing for and editing this book. She is a Senior Fellow of Advance HE.</p>
	<p>Christine Bruce</p> <p>Christine's research and scholarship is focused on information literacy, higher education learning and teaching, postgraduate study and supervision and research collaboration. She regularly presents keynote addresses on these matters. Her research is multidisciplinary and transdisciplinary stemming from an interpretivist qualitative research perspective informed by phenomenography and phenomenographic pedagogy. Christine is a Principal Fellow of Advance HE and a member of the International Federation of National Teaching Fellows.</p>
	<p>Ian Stoodley</p> <p>Ian is an information manager, higher education researcher and project manager. He has managed libraries and trained librarians in Australia, Cameroon, France, Kosovo, Tajikistan and Yemen. His research has embraced the experience of learning, higher degree research supervision, information technology research, and professional ethics. His project management has included multi-institution, nationally funded projects investigating the student experience and institutional practices aimed at enhancing that experience.</p>
	<p>Jillian Blacker</p> <p>Jill is an innovative administrative manager with over 15 years' experience in the higher education sector working across many different areas including action research projects focused on the widening participation agenda. She has extensive experience providing support to researchers, supervisors, and academic leaders on all aspects of higher degree research; and has a proven track record of resolving complex cases to ensure mutually agreeable outcomes. She is a confident mentor and coach and has been drawn to learning about mental health practices and strategies to provide support to researchers and supervisors. Building relationships and working collaboratively and creatively is a key component of her professional practice. She is a Fellow of Advance HE.</p>
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Authors



Chapter 1: Approaches to Supervision

	<p>Susan Gasson</p> <p>Susan's research focuses on research education and development, research collaboration, and employability. Adopting qualitative approaches including narrative inquiry her research has benefited from years spent working in higher education, and building strong national and global networks. She held the role of Coordinator HDR Advisor Development, Graduate Research School, James Cook University while writing for and editing this book. She is a Senior Fellow of Advance HE.</p>
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	<p>Ian Stoodley</p> <p>Ian is an information manager, higher education researcher and project manager. He has managed libraries and trained librarians in Australia, Cameroon, France, Kosovo, Tajikistan and Yemen. His research has embraced the experience of learning, higher degree research supervision, information technology research, and professional ethics. His project management has included multi-institution, nationally funded projects investigating the student experience and institutional practices aimed at enhancing that experience.</p>



Chapter 2: Supervision: Accounting for Time

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Chapter 3: Collaboration as a Supervisory Practice

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Chapter 4: Establishing a Sustainable HDR Writing Ecology

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	<p>Dr Susan Mowbray</p> <p>Susan is the Academic Literacy Advisor for the Graduate Research School at Western Sydney University. In this role, Susan works alongside higher degree researchers to help them develop and strengthen their academic writing skill; this may be through regular avenues of support or 1:1. Susan's research interests include doctoral writing and doctoral candidates' experiences of learning, as reflected in her publications.</p> <p>Juliet and Susan facilitate and co-host bimonthly online discussions for the Doctoral Writing SIG Community. This initiative has grown since it was instigated at the Doctoral Writing SIG meeting at the 2018 Quality in Postgraduate Research (QPR) conference. The discussions aim to build community and has members from across Australia, New Zealand, Canada, South Africa, United Kingdom and the United States.</p>



Chapter 5: Early Intervention: Helping Higher Degree Researchers Thrive Throughout Candidature





Dr Anna Kokavec





Anna is a registered psychologist, mental health educator, and addiction researcher. She has extensive experience working with young adults in academic, organizational, and clinical settings and is currently a Senior Lecturer in Medical Education, Student Support and Professionalism and Academic Lead Student Support in the College of Medicine and Dentistry at James Cook University. Anna's research activities are largely focused in the human psychoneuroendocrinology area – or, in other words, the interactions between human behaviour, brain, hormones, and immune system. In particular, she is interested in investigating the effect of commercially available alcohol on the inter-relationship between steroid hormones, energy metabolism, and immune function in young adults. Other projects that Anna has been involved in include determining the efficacy of nutritional therapy in prevention of migraine; identifying the psycho-social predictors of drug and alcohol consumption in young adults; and developing community-based psychosocial support for cancer survivors.

Chapter 6: Creating Successful Higher Degree Researcher Pathways in a Developing Country – Papua New Guinea


	<p>Rachel Aisoli-Orake</p> <p>Rachel attained her MLitt and PhD degrees in the areas of ESL Writing Feedback and Writing Pedagogy from ANU and University of Newcastle, respectively. She has taught at different education institutions in PNG during her career and holds leadership roles in the academy and as convenor of the Women in Higher Education Significant Interest Group.</p>
	<p>Veronica Bue</p> <p>Veronica is a Senior Lecturer in the Department of Agriculture, Papua New Guinea University of Technology with over 10 years of teaching experience specialising in Agriculture Extension and Rural Development. She is actively involved in the supervision and mentoring of postgraduate students in research areas including: smallholder livelihoods, household food security, evaluation and impact assessments of agriculture extension programs and gender studies. She is also involved in ACIAR (Australian Centre for International Agriculture Research) collaborative research projects with Universities in Australia such as Curtin and Canberra University.</p>
	<p>Mirzi Betasolo</p> <p>Mirzi is a Filipino and registered Civil and Geodetic Engineer in the Philippines who has 24 years of teaching experience in 4 countries. She currently holds the role of Head (Chair) of the Department of Civil Engineering.</p>
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	<p>Sogoing Denano</p> <p>Sogoing has been a lecturer at PNGUoT for nearly 20 years. She has completed a Master of Science at the University of Reading.</p>
	<p>Dora Jimela Kialo</p> <p>Dora holds a Master of Educational Leadership Degree from the Divine Word University, Madang, PNG. She also holds a Bachelor of Education majoring in Teaching Secondary English Language and Literature and Social Sciences from the University of Goroka. She has been a Lecturer at the Papua New Guinea University of Technology- Taraka Campus Teaching & Learning Methods Unit since 2014. She is currently a PhD Student at the University of Goroka, EHP, PNG from 2020–2023. Dora is an innovative Trainer of Trainers in Problem & Project Based Learning.</p>

	<p>Frieda Siaguru</p> <p>Frieda is a Senior Lecturer at PNG University of Technology.</p>
	<p>Jillian Blacker</p> <p>Jill is an innovative administrative manager with over 15 years' experience in the higher education sector working across many different areas including action research projects focused on the widening participation agenda. She has extensive experience providing support to researchers, supervisors, and academic leaders on all aspects of higher degree research; and has a proven track record of resolving complex cases to ensure mutually agreeable outcomes. She is a confident mentor and coach and has been drawn to learning about mental health practices and strategies to provide support to researchers and supervisors. Building relationships and working collaboratively and creatively is a key component of her professional practice. She is a Fellow of Advance HE.</p>
	<p>Susan Gasson</p> <p>Susan's research focuses on research education and development, research collaboration, and employability. Adopting qualitative approaches including narrative inquiry her research has benefited from years spent working in higher education, and building strong national and global networks. She held the role of Coordinator HDR Advisor Development, Graduate Research School, James Cook University while writing for and editing this book. She is a Senior Fellow of Advance HE.</p>



Chapter 7: Supervision of Indigenous Research and Higher Degree Researchers

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	<p>Martin Nakata</p> <p>Prof Nakata is Deputy Vice-Chancellor Indigenous Education & Strategy at James Cook University. He is a leading Indigenous academic in Australia, and the first Torres Strait Islander to graduate with a PhD.</p>
	<p>Sana Nakata</p> <p>Sana is Associate Professor and Principal Research Fellow at the Indigenous Education and Research Centre, James Cook University. She is trained in the law and political theory of the Western tradition, and her research focuses upon the politics of childhood, Indigenous policy and governance.</p>
	<p>Felecia Watkin Lui</p> <p>Felecia is a Torres Strait Islander woman with <i>giz</i> from Erub and Mabuiag. She is an Associate Professor of Indigenous Studies in the Indigenous Education and Research Centre and Thematic Convenor of Indigenous Futures for the Cairns Institute, James Cook University.</p>

Chapter 8: Supervising International Higher Degree Researchers from Non-English Speaking Countries

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	<p>Susan Gasson</p> <p>Susan's research focuses on research education and development, research collaboration, and employability. Adopting qualitative approaches including narrative inquiry her research has benefited from years spent working in higher education, and building strong national and global networks. She held the role of Coordinator HDR Advisor Development, Graduate Research School, James Cook University while writing for and editing this book. She is a Senior Fellow of Advance HE.</p>

Chapter 9: Building Literacies for the Research Lifecycle

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Chapter 10: Empowering Research Supervisors: Developing Information Literacy in Higher Degree Researchers



Stephanie Bradbury

Stephanie is the Manager, Scholarly Communication Services, Office for Scholarly Communications at Queensland University of Technology (QUT) Library. She works with her team of scholarly communications experts to deliver a range of targeted services to support QUT's research community in copyright, research data management, information literacy, publishing, open access publishing options, journal management, and publication metrics.



Lyndelle Gunton


Lyndelle is the Coordinator, Information Research Skills, Office for Scholarly Communications at Queensland University of Technology Library, and the Unit Coordinator for AIRS – Advanced Information Research Skills. Lyndelle is an academic librarian with a passion for fostering information literacy in higher education. With more than 20 years of experience in Australian academic libraries, Lyndelle has dedicated her career to equipping students, researchers, and educators with the tools they need to navigate the complex landscape of information in the digital age.



Sal Kleine

Sal is a Liaison Librarian in the Faculty of Business and Law at Queensland University of Technology Library. As an advocate of lifelong learning, Sal supports higher degree researchers to develop the information literacy skills required to successfully progress through their research program and beyond.



Chapter 11: Empowering Higher Degree Researcher Career Planning

	<p>Alan McAlpine</p> <p>Alan is the Deputy Director, Student Success, at Curtin University. Alan looks after teams who provide support for careers, deliver co-curricular experiences, volunteering and leadership. Student Success also comprises a co-curricular awards program and delivers the University Orientation and First Year Experience. However, that is a far cry from where he started. He completed a bachelor's degree and PhD in the sciences, Biochemistry to be broadly specific. He has published in both the sciences and career development literature. He was a post-doc in four separate institutions before making a career change.</p> <p>Alan's career took him into a private consultancy as a career practitioner before returning to the higher education sector. He has a master's degree in counseling and has been nationally and internationally active in the career field for over 20 years. It took him a while to connect all the dots, between his previous and current careers, but the curiosity factor was (and is) always there. In his current stage of life and career, he has shifted from hands-on practitioner (career counsellor for Higher degree researchers) to manager and national leader. He is extremely passionate about providing quality support to students (all levels) to ensure they can make the best-informed decisions about their future direction and help them understand how they can contribute to that future.</p>
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Chapter 12: Building Research Integrity

	<p>Helen Titchener</p> <p>Helen has more than twenty years' experience of managing, leading, and advocating for higher degree research across government, universities, and peak bodies. She has worked in a number of universities including the Australian National University, James Cook University, and the University of Canberra. Helen has previously been actively involved with the Australian Council of Graduate Studies and the Australian Research Management Society. Her research work focuses on academic integrity.</p>
	<p>Bronwyn Greene</p> <p>Bronwyn has held senior positions in the area of research management and integrity for over twenty-five years. She is the Director, Conduct & Integrity at UNSW Sydney, and is a sector leader in preventing and responding to academic integrity, research integrity, public interest disclosures, student conduct, gendered violence, and complex complaints. She is a Co-Chair of the NSW Universities Public Interest Disclosures Practitioners Network and former chair of the Go8 Research Ethics and Integrity Committee.</p>

Chapter 13: Supervising for Societal Impact: A Holistic Approach to Higher Degree by Research Support

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Technical Team

Sincere acknowledgement and thanks are given to the following colleagues for their valuable contributions during the production of this eBook:

- Alice Luetchford, Sharon Bryan, Deborah King (Open Education Team, James Cook University Library)
- Adrian Van Rossum (Digital Media Support Officer, James Cook University)

PREFACE

Here is a book written *by* higher degree research supervisors *for* higher degree research supervisors. It is a timely gift for novice and experienced supervisors alike as we navigate changing research environments and dynamic higher education systems; whilst constantly seeking to guide those we supervise along the path of achieving not only research qualifications, but also research excellence, innovation and independence on a global stage.

All contributors to this volume are well qualified as researchers, research administrators, developers, and supervisors. They share their experience in ways that are thought provoking, engaging, and illuminating, prompting readers to consider implications for their current circumstances.

You will find in this volume stories and ideas to guide and remind that our experience of supervision is a shared one. We are never alone. Working with other supervisors as we support students provides a unique space for building networks and engaging in rich research discussions. Wherever we are, we are working in community — within supervisory teams and research groups, with internal and external stakeholders. Our communities enable collaborations with many colleagues and our higher degree researchers to make possible research education environments that will create new generations of researchers dedicated to bringing about a better world.

We all want our **higher degree researchers (HDRs)** to thrive, while studying and beyond. Here is an open access, contemporary volume that explores the role of supervisors as we support our students, while highlighting the vital role of collaboration in all research and research education, and especially in these turbulent times for higher degree researchers (HDRs). It is a volume that will raise our awareness of our own approaches to supervision and the role(s) of the wider community. It is a book that aims to make confident supervision possible for all walking alongside others on their journey of becoming researchers.

When writing this preface, some members of the book team asked me to add a “window to my supervisory world”. It has been a privilege for me to share the research journeys of at least fifty doctoral and masters researchers, with most as principal supervisor, a journey that has often continued beyond their doctoral experience; several have become close colleagues. I have seen many of them become award-winning researchers, win fellowships and senior positions in academia and industry, build their own research teams, and have an amazing impact in their sphere of influence, all over the world.

My supervisory perspectives have been heavily influenced by my own candidates and colleagues, as we have worked in different kinds of collaborative communities. I have been able to experience different cultures and perspectives through opportunities to visit other universities and serve in leadership positions for research education at school, faculty, and university levels as well as through an Australian learning and

teaching fellowship awarded in 2008. I have continued to learn beyond measure through being involved in the development of this book.

It is a privilege and a pleasure to commend to you this volume, its authors and editors, and the approaches, frameworks, and perspectives they offer.

Professor Christine Bruce

Australian Learning and Teaching Fellow

Principal Fellow UK, Advance HE

Member, International Federation of National Teaching Fellows

Editorial Advisor, JCU Advisor E-book project.

INTRODUCTION

Abbe Winter and Jillian Blacker

Confident Supervisors is intended to be both a textbook and a professional development resource for HDR supervisors and researcher developers involved in providing workshops and resources to support research supervisors in their practice. Throughout this book, authors introduce different theoretical frameworks and concepts to provide supervisors with tools and strategies for responding to the challenges and opportunities associated with research supervision. It contains chapters written by current supervisors and research support partners who are engaged in the scholarship of supervision and can share the practical and theoretical constructs they employ in their practice. The authors have been drawn from a broad range of higher education and research contexts and contribute understandings of local and global relevance.

This book responds to turbulent times in higher education, offering practical tips and suggestions for supervisors to pivot to changing contexts. We thank our friends and colleagues who have joined us in creating this resource. Throughout this book we will refer to Masters by Research, Doctor of Philosophy, and Professional Doctorate students as **higher degree researchers**.

Why are we writing this book?

Supervisors are essential in guiding higher degree researchers and their projects. Academics, in accepting the role, relish the chance to share their expertise, engage with new thinking, and support the creation of the next generation of researchers. Because of the critical role of supervisors, well-resourced universities and research organisations have introduced registration systems and professional development programs to support good supervisory practices, and those who have such resources available to them should make good use of them. This book has been written as a virtual community of practice resource, offering perspectives from a range of contexts, and providing professional development to enhance supervisory practices.

Supervisors supported by a community of practice

The chapters in this book reflect the extensive and diverse experiences of the authors as supervisors and researchers. It's a great handbook for new supervisors as well as those with years of experience as researchers. Our book covers a range of contemporary issues that require an increasingly collaborative and inclusive approach to research and supervision.

The changing landscape – what makes research

different?

The book is designed to be accessible to researchers from diverse contexts. It acknowledges also that the population of higher degree researchers is becoming increasingly diverse, and projects and styles of thesis continue to evolve, as the quest to create independent researchers continues.

With the continuing emergence of online learning technologies, changing research funding modules, refinements to research codes of conduct, increased calls for industry-engaged research, and metrics-driven research excellence tools, supervisors may find the dynamic nature of the research education confronting. This book may be the first in a series of editions that will allow the resource to remain current and relevant. It opens up the potential for sharing of practice and engagement across the research education community of supervisors and their various research services partners, including librarians, research officers, and learning and career advisors.

In an area of practice where each candidate and project, as well as the constantly changing context, challenging supervisors to continue to evolve and refine their practice, it is our intention that this book will provide support, and point toward further resources, as well as encouraging engagement with communities of research and supervision.

Contextual scene-setting: Research supervisors

This book has been written with a view of applying a research lens and further developing your own practice. It therefore has relevance for those engaged in formal coursework, professional development, and independent life-long learning. The intention is to enable supervisors to reflect on their own practice (Schön, 1983), as well as learning from the examples provided from others' practice, to build their own self-efficacy (Bandura, 1977, 1997) as a research supervisor.

The book is also a support mechanism for building community. While research by its nature can be isolating, you can't do it in isolation. So, this book is the beginning of a community of practice reaching into the future and across the globe. The context for this book is the encouragement of open access **knowledge-sharing and community-building** in researcher education.

Each chapter is structured similarly, to allow easy access to materials in a concise way. This ensures that each chapter contains information that is relevant, practical, and easily understood by diverse readers across the world. Topics covered in the book range from frameworks to support supervision through to more nuanced advice on specific supervisory practices.

The book is broken into four main sections – *Collaborative Approaches*, *Capacity Building*, *Diverse Research Environments*, and *Future Focus*. In addition, we have a Preface from Professor Christine Bruce and reflections from three HDR students on what they learned from their experiences as higher researchers.

The first three chapters in the *Collaborative Approaches* section offer approaches, frameworks, and perspectives to help supervisors build great relationships with higher degree researchers, guide their development, and inform their careers as independent researchers. The work builds on Professor Christine Bruce's Australian Research Council project on supervision. These chapters are based on the authors' decades of working with hundreds of supervisors and their higher degree researchers. Chapter 1 – *Approaches to Supervision* – introduces scaffolding, direction-setting, and relationship building as three possible approaches to the supervisory relationship. Chapter 2 – *Supervision: Accounting for Time* – discusses six ways of considering and using time in a research supervision relationship. Chapter 3 – *Collaboration as a Supervisory Practice* – introduces the roots, fields, and fruits model of working with others in research projects.

The *Capacity Building* section offers strategies for developing writing capacity and enhancing student well-being. Learning ecologies are introduced that encourage writing, reviewing, and editing. Practices and tools to enable early intervention and higher degree researcher empowerment are shown to lead to sustainable supervision. These chapters will help you support your higher degree researcher's writing and well-being. Chapter 4 – *Establishing a Sustainable HDR Writing Ecology* – discusses the resources beyond the immediate supervisor(s) that can help a higher degree research student with their writing needs across their candidature. Chapter 5 – *Early Intervention: Helping Higher Degree Researchers Thrive through Candidature* – introduces the Graduate Research Engagement Assessment Tool (GREAT) which can help supervisors and their HDRs to self-assess, and risk manage communication issues.

The *Diverse Research Environments* section provides an understanding of the diverse international and institutional contexts faced by researchers and supervisors. It explores contexts and resources for researchers and supervisors in developing countries, supervising researchers from non-English speaking countries as they transition to studies in Australia, and supervision of Indigenous research and researchers. It also explains the preparation of postgraduate researchers to navigate the boundaries of Indigenous and non-Indigenous knowledge standpoints. Chapter 6 – *Creating Successful Higher Degree Researcher Pathways in a Developing Country – Papua New Guinea*, Chapter 7 – *Supervision of Indigenous Research and Higher Degree Researchers* and Chapter 8 – *Supervising International Higher Degree Researchers from Non-English-Speaking Countries* all discuss ways to support higher degree researchers from diverse backgrounds and in developing countries to progress to completion.


The *Future Focus* section invites supervisors to build a higher degree researcher's information literacy, which contributes to their successful project completion then forms a basis for independence in their working life. This section then presents views on career planning which prepares a higher degree researcher for their transition into the working world. It also explores research integrity, which guides a higher degree researcher to conduct their project with rigour and according to code of conduct requirements and prepares them to be a professional researcher in the future. The content of this section is integral to both a higher degree researcher's project and their future research career. Chapter 9 – *Building Literacies for the Researcher Lifecycle* – discusses the help that university librarians can provide for HDR students. Chapter 10 – *Empowering Research Supervisors Developing Information Literacy in Higher Degree Researchers* –

introduces the Advanced Information Research Skills (AIRS) program for HDR students. Chapter 11 – *Empowering Higher Degree Researchers' Career Planning* – discusses the ways that supervisors can use their own experiences to help their HDR students with career decisions and introduces two models – Systems Theory and Chaos Theory – that might inform career conversations. Chapter 12 – *Building Research Integrity* – discusses the importance of the responsible and ethical conduct of research. Chapter 13 – *Supervising for Societal Impact: A Holistic Approach to Higher Degree by Research Support* – explores the supervisor's role in working with a student across the nexus of engagement and impact. The authors speak of their experiences as both students and supervisors in framing a candidature to realise a candidate's career goals.


The book ends with a Conclusion chapter that provides a thematic analysis of the topics covered across the book.

Navigating highs and lows is part of being a research supervisor. We learn by failure (our own and others') just as much as success. This book is a guideline for success, built on all of the authors' knowledge and experience in the field of research supervision. We hope this book will help by supporting you with the wisdom and experience of all the authors who have contributed to it.

References

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

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HIGHER DEGREE RESEARCHER REFLECTIONS

Reflections of a doctoral researcher for a PhD exploring aging well in the Torres Strait

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I appreciate that every PhD journey is a different one, and experiences vary. To appreciate my expectations and experiences of supervision I will provide some context. I am a mature age candidate with a clinical background in health, now working within a supportive research team based at the same university where I am doing my PhD on a part-time basis. I have been involved in health research for several years, so I bring to my PhD fundamental research skills and topic knowledge. Furthermore, I came into this PhD journey off the back of a Master of Philosophy that I completed at a different university, so again had some idea of what was in store!

That said, the supervisory panel that I have remains invaluable. I appreciate that my supervisors recognise my experience in research, tailoring their input to my specific needs. I was definitely looking for a mentor and not a teacher. I think I would have been offended if I was treated the same way as someone who did not have the experience that I brought.

What I did find useful at the beginning of my candidature was completing the “Ingrid Moses Expectations of Candidates and their Advisory Team” checklist. The main benefit of the tool for me was using it as a building block to establish trust and clarify what my supervisory needs specifically were. Having both mine and my supervisor’s expectations clearly articulated from the beginning gave peace of mind.

Another valuable aspect that my supervisors bring, especially in the early days of candidature, relates to the practicalities of navigating the PhD enrolment and university

requirements. Having someone to go to for advice and guidance, to ensure the appropriate paperwork has been submitted, and the correct mandatory training completed etc., made the prospect of the PhD less daunting. I like to be assured that I am doing the right thing and haven't missed some crucial piece of administrative paperwork or training. Knowing my supervisors are there to guide me through the milestones is reassuring.

I am confident in my ability to conduct the practical side of my PhD, going out in the field to do data collection. However, where I benefit from input from my supervisors, is from the philosophical side and the deep thinking required in a PhD. I have appreciated my supervisors pushing me outside of my comfort zone, encouraging critical thinking, and challenging my ideas and thinking (in a constructive manner). I appreciated the literature my supervisor guided me towards and the encouragement to be an independent thinker.

The regular supervisory meetings, although at times seem too frequent, keep me accountable and on task. Setting deadlines especially for the writing components has kept momentum and the writing flowing. Without those goals and deadlines, the writing would have been pushed aside in lieu of the practical side of the research. In this sense, my supervisors have kept me grounded in the fact that it is a PhD and not just a research project that I am doing.

I am fortunate that my supervisors have always been accessible both for booked supervision sessions and for ad hoc catchups. I feel valued and appreciate that I can reach out whenever I need advice or feedback and am promptly replied to when I send emails. Feedback is timely and thoughtful. I genuinely feel there is an interest in my research, and I am supported when presenting my work, which is definitely an encouragement.

Lastly, I value the personal dimension that my supervisors bring. They are empathetic and understand the aspects of my "outside" life that may impact on my progression. There is no judgment but just support, understanding and encouragement. There is a genuine desire to see me succeed whilst providing opportunities to broaden my horizons and develop my career during my PhD journey.

Reflections of a PhD student on HDR supervision in a developing university research culture

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Carrying out research, writing up research proposals and research write up reports is a complicated task that requires elaborate writing skills. Scientific Writing Skills, as we know in academic writing are made up of many different subroutines, all of which are learned through practices that are integrated and connected appropriately with intricate step by step supervision at the initial stage. In research, we are trying to achieve many different goals all at the same time. The difficulties that face postgraduate students have become prominent in recent years. There are so many difficulties we encountered along the way, especially for those of us who have been out in the field for far too long before re-entering universities to study at the postgraduate level have become more prominent in recent years. In particular, attention is focused on completion rate of those doing PhD postgraduate studies in Papua New Guinea Universities. We students expect professional expertise and guidance from our principal supervisors with additional support from co-supervisors. We want our supervisors to be interested in and be enthusiastic about our work. Many times we find the supervisor is not well organized and readily available for discussion and help, especially online collaboration. It would be much easier if we did virtual collaborations in real time, but it is in reality not so.

Of the little research into Higher Education research practices in Papua New Guinea Universities, a high proportion of it (research) is done by students or by academics operating on behalf of the institutions and its management. I am arguing here that the lecturer in the School of Postgraduate Studies can raise their normal pattern of their classroom enquiries into a valuable contribution to educational research. I am arguing that the best research is done when associated with the development of educational practice as a research student. Indeed, I am arguing that together with other factors, it is distance from realities of classroom life that have rendered so much research sterile.

1. How much educational research is done in my institution, by whom and to what

effect?

2. How can I make my own educational enquiries more systematic and thorough with very little supervision?

Undertaking research with a view to increasing knowledge, or influencing practice is very significant in building on some already existing knowledge and adding more, for example, with the technology use and the worth of the existing knowledge. I have gone to the existing libraries but I could not find any latest Journals on the research into Online Education nor any on learning management systems such as Google Classroom. This leaves me with more questions on how to re-interpret earlier results, compare predictive values, apply new methodology, and produce an application of an idea and so on.

I do understand that, in order to establish the purpose of a piece of educational research, one first has to locate it in the literature. But, where there is no old writing on that topic of research, how do I do the literature review?

I, therefore, strongly argue that the School of Postgraduate studies should employ full time lecturers to support Postgraduate students, many of whom have no research background or have forgotten the research skills that were handwritten a long time ago and that may have already been discarded.

In some other instances, some face to face contacts were made. But those contacts were sometime irrelevant and unnecessary. For example, in the first instant, some Principal supervisors do not give specific criteria such as the proposal guidelines or an outline of the thesis structure with required number of pages and or words for the first paragraph. There is so much mismatch between my supervisor and I in terms of real time collaboration as my study is geared towards technology oriented research or online ethnography. It has become very challenging to print and send every chapter, sometimes more than five times. It is challenging because I see a big gap between myself and my supervisor in terms of digital technological literacy and usage.

There are some supervisors who are very meticulous in their supervisory jobs which often see a successful passing and graduation of their students.

My supervisor's style of supervision was direct in the initial and final stages of the research period with a lengthy quiescence in the middle.

I have tried to stay on course without additional support tailored for my specification- an online auto ethnography.

***“We are on this journey together”*: Reflections of a doctoral researcher learning and growing with his advisory panel**

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“We are on this journey together”. Reflecting on my journey as a third-year PhD candidate at James Cook University (JCU), these words from my primary advisor early on in my candidature still resonate with me today. My personal growth as an individual and my journey as a researcher today would not have been possible without my advisory panel’s guidance, encouragement, and support.

Making Decisions as a Team

Since embarking on my candidature with JCU, I have always felt like part of a team with my supervisors. We would deliberate and make decisions collectively about the research questions and studies required for my PhD. This collaborative manner of making decisions also grounded the ways in which I navigated my PhD milestones and various challenges that arose during the candidature. These included the various times when I had to make changes to my initial plans and studies due to new findings arising from the literature or empirical research, as well as considering the time and resources we had when I had to take some time away to deal with health and personal issues that impacted my family. My supervisors were there every step of the way, providing me with support and encouragement. As a result, I wasn’t made to feel like I was navigating and negotiating this PhD journey all on my own.

Sense of Trust and Psychological Safety

There was also a sense of trust and psychological safety that was established with my advisory panel at the beginning and that still remains today. My advisory panel always welcomed my questions, and I never felt afraid to highlight my worries regarding the PhD. If I had concerns about whether a particular analytical method would work or if my data collection would go according to plan, I could voice these without fear of reprisal.

I felt that the advisory panel valued all my contributions and work, no matter how small. Every PhD milestone I achieved and every piece of writing I accomplished were regarded as important, valuable aspects that contributed to my growth as a researcher. These included

the coursework modules I undertook during my PhD and presentations at small-scale seminars and big conferences. I could also openly discuss my future aspirations and career needs with the advisory panel, whether these were about doing a postdoctoral fellowship overseas at well-known institutions or seeking advice on academic and teaching positions. Discussion also included advice regarding the types of funding available and the universities I could consider, as these institutions were very strong in the research areas, I was interested in.

Because of this sense of trust and psychological safety, I also did not view feedback and comments that I received on my written work as negative. On the contrary, I always looked forward to receiving my supervisor's input as I saw how their perspectives and comments value added to my research work. Their feedback was insightful as they highlighted various points and views that I may not have thoroughly considered while writing my papers. Furthermore, their comments and feedback were always well-considered, respectful, and thoughtful. Hence, I saw them as ways my supervisors were lifting me up to become a better writer and researcher.

Learning and Growing Together

Lastly, I felt my supervisors were open to learning and growing together with me throughout my candidature. While I would formally meet my supervisors once a month to update them on my research findings and challenges that arose, I also had informal meetings and discussions with my primary supervisor every two weeks or so. These catchups enabled me to discuss any challenges that I was facing in a particular week or simply just share what I would be doing with my partner over the weekends and holidays. If any issues needed to be escalated further, my primary supervisor would proactively seek advice and guidance from the other panel members or research deans. These formal and informal meetings were valuable in ensuring they remained accessible to me as a PhD candidate. My supervisors were also willing to try different ways of collecting and analysing data, being open to any surprises that I found as part of my research findings, and adapting my research to these emergent findings. Knowing that my supervisors were there to learn and grow with me has helped allay my fears and anxiety about the uncertainty I faced in doing research as part of my PhD candidature.

COLLABORATIVE APPROACHES

1. APPROACHES TO SUPERVISION

Christine Bruce; Ian Stoodley; and Susan Gasson

Why read this chapter?

In this chapter we explore three approaches to supervision of higher degrees by research as the highest form of learning and teaching:

- Scaffolding – building detailed plans that guide research progress
- Direction setting – taking a big picture view of the outcomes to be realised
- Relationship – building a rapport that will let everyone endure the challenges and thrive during candidature.

Three different perspectives on the approaches are also explored:

- Higher Degree Researcher perspectives – learning and developing as a researcher, accounting for prior experience
- Supervisor perspectives – maintaining research standards, building supervisory capacity, and imparting expertise
- Wider community perspectives – making original contributions through broader engagement.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentsupervisors/?p=70>

The approaches outlined below are the outcome of research involving interviews with supervisors within a science and engineering research education community (Bruce & Stoodley, 2013). The research was funded as part of an Australian Learning and Teaching Council grant.

Familiarity with the approaches may allow supervisors to consciously select their preferred approach for a

particular context and broaden their repertoire of approaches to enable healthy and holistic candidature experiences.

Approaches to supervision

In this chapter we introduce three approaches that accommodate a range of supervisor and candidate contexts. These approaches have been adopted by supervisors working with higher degree researchers, who each come to studies with a unique set of skills and abilities, life circumstances, as well as expectations of their research education experience.

As supervisors, you are encouraged to come to this chapter ready to reflect on your own supervisory experiences as you engage with the approaches and perspectives described. The approaches offer alternative practices, and perspectives, and may support you in reflecting on your supervision of higher degree researchers. In doing this you may wish to account for broader considerations such as the expectations of key stakeholders including employers, industry, or community partners in supporting your higher degree researcher's career aspirations. You may also examine the relationships between the higher degree researcher's project and your broader body of research (see also Chapter 3).

Approach One – Scaffolding

◆ The idea

The first approach to consider is scaffolding- building detailed plans to guide the higher degree researcher. Your selection of an approach will be informed by what is happening in the supervisory process. When supervisors adopt a scaffolding approach, higher degree researchers will be encouraged to make systematic, planned progress.

A project management approach, for example, may support higher degree researchers' engagement with the research process. The scaffolding may also involve negotiating a project plan that clearly sets out the respective roles of higher degree researchers and supervisors in the project. In this approach, the focus is on acquiring research skills and capabilities and defining tasks and responsibilities that will be required at various points along the way. Such exposition of roles can inform the creation of a plan, perhaps including monthly, or even weekly outputs during critical phases. When scaffolding supervisors build into plans expectations for reporting on progress toward completion. Plans create an opportunity for discussion of deliverables. Deliverables might include aspects of the research process (e.g., data collection and analysis), required elements (e.g., candidature milestones), research outputs (e.g., journal or conference papers), or research compliance requirements (e.g., ethics applications, data management plans and intellectual property agreements).

◆ When to use this approach?

Supervisors can use the scaffolding approach to great effect at the start of candidature when introducing higher degree researchers to the notion of evolving a researcher identity. Establishing shared expectations can give higher degree researchers direction, helping them establish a pattern of work. Sharing expectations will also help them to avoid confusion or misunderstanding that can confound progress (see also Tracking Postgraduate Research Tool [Word document]). Scaffolding can also be applied to realise key objectives such as confirmation and publication deadlines, or thesis submission. The project plan may need to be set out in more detail toward the end of the candidature. A shared completion project plan will ensure that supervisors incorporate the final review of the thesis into their busy calendars and that details for finalisation of intellectual property, authorship, and data storage are taken into account. In using the scaffolding approach, it is important to empower higher degree researchers to take ownership of their projects, and responsibility for planning as the candidature unfolds.

Approach Two – Direction setting

◆ The idea

The application of direction setting requires supervisors to take a big-picture view of the research project being undertaken. Adoption of this approach helps higher degree researchers understand the work required in creating a significant and original contribution to knowledge. Supervisors can contribute to direction setting because of their deep understanding of the nature of the thesis genre within their discipline. That understanding comes from the experience of completing their own higher degree studies and working as supervisors and examiners of higher degree researchers. Direction setting involves higher degree researchers realising the scope and focus of their knowledge contribution. Higher degree researchers can struggle to identify the aspect of their life's work to be addressed in the confines of the thesis experience. Direction setting can also be a way of identifying where project plans need additional development, or research questions/hypotheses are poorly defined. Direction setting requires supervisors to emphasise the need for a reasonable set of research objectives, and methods, and theories that can appropriately inform the work. As the scope and focus of projects are established, higher degree researchers' career plans should also be influential. For those seeking academic careers, for example, projects may involve basic research, conference attendance, and authorship of journal articles. For those wishing to return to their professions, thesis work may be more applied and inform presentations to professional associations, and engagement with industry mentors (see also Chapter 11 and Chapter 13).

Supervisors can use this approach to establish the scope and focus of higher degree researchers' projects. The outcome of direction setting discussions can be establishing research questions, or approaching industry or community groups to assist with data collection. By pointing higher degree researchers in the right direction, they can become more proactive in progressing their research. Adoption of this approach helps higher degree researchers to clarify their research goals.

Direction setting may involve consideration of the methods to be used, the funding required, and the theoretical or conceptual framework for the work. Selecting the domain where the work will occur helps the higher degree researcher to navigate the literature that will inform their work and identify the networks that may become part of their research community into the future. Discussion needs to account for the higher degree researcher's interests and skills, and the expertise and experience of the supervisors.

Contingency plans can be discussed as part of the direction setting. There are many reasons for requiring a Plan B. If higher degree researchers' approaches require expertise, skills, or resources beyond the range of the supervisory panel, discuss amending or augmenting the panel. If resource requirements are ambitious, or their provision is doubtful, a contingency plan should be considered. When ethics approval for access to the desired participant group may be complex and time consuming, consideration of alternative ways of gathering data may be needed. When the method or theory to be used is not clear, supervisors may ask their higher degree researcher to source additional readings. In selecting methods and theoretical approaches alignment with supervisors prioritised disciplinary or professional perspectives or expertise should be accounted for.

◆ When to use this approach?

Supervisors may find direction setting valuable at the start of candidature, but it may also be relevant if projects do not progress as planned. Contingency planning is a routine part of research work, as outcomes are necessarily uncertain. At moments of uncertainty, direction setting can help identification of a way forward, accounting for shared interests in research outcomes and resource constraints (see also Tracking Postgraduate Research Tool [Word document]).

Approach Three – Relationship

◆ The idea

Supervisors can use the relationship approach to build rapport that will help everyone endure higher degree challenges and thrive through candidature. Relationship building provides an opportunity for supervisors to focus on establishing a learning community, support networks, and personal interactions. Learning together, building working relationships with other higher degree research cohorts and industry partners, or maintaining collaborations with researcher communities are best progressed using Relationships. This approach fundamentally involves seeing the higher degree researcher as a colleague, and adapting processes and directions according to needs and circumstances of all parties involved.

Where supervisors and higher degree researchers already know each other there may be less need to establish a relationship. Where higher degree researchers are coming to study from another university, city, or country, then establishing a learning community will be more imperative. In both cases, relationships can allow supervisors to devote time to establishing expectations of all involved.

A holistic approach is required to build a relationship of trust and respect, and establish a safe space for research collaboration. As adults with life, work, and family commitments; it is not unusual for higher degree researchers to experience significant life events. Supervisors are not expected to be counsellors or health care providers. It can be challenging to know how to respond when higher degree researchers report life changing events that will impact project progress. Changes may be positive or negative. Even positive changes, such as the offer of a job or starting a family, will require the review of expectations. Where the change is more negative – financial, marital, or wellness concerns – a first response may be an empathetic referral to support services.

In contrast to teaching coursework studies where engagement lasts for an 8-13 week semester, supervising research degrees involves maintaining a relationship for years. Completing a research degree for many higher degree researchers involves negotiating time and financial imposts on their family and workplace. Families and employers have vested interests in higher degree researchers' progress and completion. Accounting for these interests allows supervisors to be more sensitive in their support and guidance of the higher degree researcher.

The pressure of candidature builds gradually through the degree. After the first spring of delight at admission, the pleasure of immersion in an area of passion can last for much of the candidature. But there are many challenges and demands. Helping the higher degree researcher build resilience to adversity, and persistence in the face of ongoing pressure, is part of the work of the supervisor. Toward completion, higher degree researchers can face numerous conflicting pressure beyond finalising the thesis, such as transitioning to work, and aligning thesis submission with visa, lease, and scholarship end dates (see also Chapter 2).

One challenge for supervisors is how to motivate higher degree researchers to stay on track. This may require focused skills and capacity building, intense one-on-one support, or referrals to professional services or research networks. Sometimes providing timely feedback, taking time for a coffee catch up, or supporting submission for a journal article can get a candidature back on track.

In extreme cases, a higher degree researcher's life circumstances may present a major barrier to progress. Ensuring that higher degree researchers appreciate the high levels of cognitive attention vital to their management of limited resources can help them prioritise and work through adversity. Strong relationships will ensure supervisors are aware of concerns and can support applications for leave or time away from higher degree research as required to address pressing concerns (see also Chapter 3 to further explore the role of supervisors in building collaborative research cultures and collaborative capacity).

◆ When to use this approach?

Collegial relationships with their higher degree researchers, university administration, and others frequently allows supervisors to smooth wrinkles in candidatures. Helping higher degree researchers build learning communities and support networks can be a wonderful strategy. This approach allows supervisors to delegate some work. Creating peer-to-peer writing groups allows higher degree researchers to get

feedback on early drafts, see the quality of the work of others, and gain experience as reviewers. At cohort gatherings, higher degree researchers can practice presentations and share their challenges and successes. These conversations help higher degree researchers to normalise some of the research difficulties they will face day to day. Industry mentors can help higher degree researchers explore career objectives and also consider how their research may have social impact into the future. Contact with industry can open up access to resources, and create internship, and job opportunities.

The final stages of candidature, when scholarships and visas may be coming to an end, present a particularly demanding time both academically and personally. While needing to focus on completion, the higher degree researcher can be distracted by the need to find work, or return to their home country, or apply for extensions to fund additional time required to complete. Being aware of these demands and pressures is essential. Discussions with your higher degree researcher can help reveal who in the university or community can assist with concerning issues. Resolving financial and career concerns can be key to finalising the thesis for submission (see also Chapter 3).

Perspectives on applying the approaches to supervision

Supervisors tend to have familiar or preferred ways of thinking about teaching in the research context. Their thinking may vary depending on the phase of candidature, or the nature of the research process. Ways of thinking may be informed by role models or past practices. Table 1.1, below, provides a menu that you can call on to extend your practice. This may be in response to a new challenge, or the desire to develop your practice further.

Table 1.1: Supervisors' ways of thinking about teaching in the research context (adapted from Bruce & Stoodley, 2009)

Focus	Content	Supervisor's intention	Supervisor's strategy
Teaching in the research context is viewed as:			
Supervisor perspectives	1 Upholding academic standards	4 Promoting the supervisor's development	7 Imparting academic expertise
Higher degree researcher perspectives	2 Promoting learning to research	5 Enabling student development	8 Drawing upon student expertise
Wider community perspectives	3 Venturing into unexplored territory	6 Contributing to society	9 Forming productive communities

Supervisor perspectives

Ensuring the rigour and quality of the research generated by higher degree researchers requires the application of disciplinary standards and research knowledge. These perspectives may be particularly relevant or useful as higher degree researchers approach milestone events such as the submission of a publication, or ethics application. Your higher degree researchers have probably selected you because of the expertise and knowledge you bring to the process. They look for your role modelling and will be interested in your research outputs, and practices. Encourage them to participate in your institution's professional development events, and to engage with your research community to acculturate them to your discipline and research culture.

Higher degree researcher perspectives

Particularly at the start of candidature, it can be useful for supervisors to adopt a higher degree researcher perspective. These perspectives open up connections, allowing supervisors to get to know higher degree researchers and explore their readiness for the research journey. By being aware of what they know already, what has prompted them to engage in research, and their expectations of research studies, supervisors can guide their experiences. Being empathetic to their concerns and responsive to their needs, supervisors can guide their transition to research studies and beyond.

Conversation starters

What methodologies have you used previously?

How might this research design impact your work-life balance?

What research approaches are you keen to pursue, and why?

How can we build your confidence in the execution of your research design?

Wider community perspectives

Broader communities can support your higher degree researcher's development and their research. They may be able to provide the data or site for the research work. They may be able to provide infrastructure to facilitate the research work. They may be able to provide research expertise to enable the implementation of the research work. Identifying suitable communities and engaging with them meaningfully to realise outcomes that can build relationships and partnerships are critical for the success of a project and longer-term research activities. Mentors from business, government, and the community can also help higher degree researchers build connections and skills that will influence their future career.

Conversation starters

How might this work help you in the future?

How might (a field leader) respond to this idea?

Who might benefit from the findings from your study?

How might you better engage the research partners with your research?

Activity

Table 1.1 above describes different teaching contexts and perspectives on research education.

Work through each row to consider how different supervisory approaches could help you to navigate different contexts. Consider how these approaches allow your expertise to inform the context. Consider using or sharing the workshop and brochure reference materials provided below (see Reference Materials).

Reference Materials

The following materials were developed as part of a Higher Degree Researcher-focused Australian Learning and Teaching Council (ALTC) Grant:


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Additional Resources

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

Bøgelund, P. (2015). How supervisors perceive PhD supervision – And how they practice it. *International Journal of Doctoral Studies*, 10, 39-55.

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2. SUPERVISION: ACCOUNTING FOR TIME

Susan Gasson

Why read this chapter?

Time is an ever-present concern during candidature for all stakeholders involved. The six concepts of time provide perspectives to enable supervisors to build effective working relationships and realise mutually agreed outcomes with their higher degree researchers. Sharing the concepts of time can help higher degree researchers to build resilience and make progress.

The six concepts of time are:

- **Life time** – impact of life events on researcher experiences
- **Career time** – influence of career phase on researcher experiences
- **Supervisor time** – role of supervisor in realising researcher development
- **Opportunity time** – place of optional events in researcher development
- **Candidature time** – understand degree requirements
- **Time management** – plan progress through a candidature

We will look at strategic applications of these concepts of time which will help supervisors to manage:

- workloads
- work-life balance
- the research education experience
- research progress

and realise:

- impactful research outcomes for higher degree researchers and supervisors.
- independent researcher practices
- higher degree researchers' future careers.



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Concepts of time in doctoral studies

Six concepts of time were identified in a narrative research study (Gasson, 2023). The research was aimed at understanding the nature of the early career researcher pathway. These concepts of time emerged as key to the doctoral experience and transitions to work.

Life time

By being aware of higher degree researchers' life times, supervisors can negotiate arrangements to ensure that sufficient time is set aside for research studies. Supervisors can explain time requirements so that higher degree researchers are realistic about the demands of candidature. Higher degree researchers will then be able to decide if they are prepared to make any necessary compromises at home or at work. Compromises to accommodate research studies will vary depending on individual circumstances.

As past higher degree researchers, supervisors understand the costs and benefits of time spent enrolled in research education. Most will remember the time taken in preparing to begin studies. That may have involved talking to family and friends, seeking out suitable supervisors, and applying for admission and scholarship funding. For some supervisors research studies were prompted by a passion for a topic, for others it was necessary for their pursuit of a research career.

Like their supervisors before them, most higher degree researchers come to research studies with family and work commitments. These commitments can delay studies commencing or impact on research progression. Some may intend to pursue an academic pathway, others may be trying to avoid stagnating in a role.

Career time

Higher degree researchers often enrol to advance or accelerate their career progress. Talking to higher degree researchers about their career expectations will help them to use that knowledge to guide the scope and focus of research projects. Together supervisors and higher degree researchers can discuss how best to shape the project to accommodate commitments that may come with career plans. Commitments may include university teaching or industry engagement. Aligning projects to account for career expectations can provide the additional incentives needed to support higher degree researchers to timely completion.

Another value-add for supervisors in discussing career time with higher degree researchers is that it builds a stronger picture of the skills, capacities and resources they bring to candidature. Knowing the research work they have previously conducted, jobs they have held, infrastructure or data sets they have access to through their work or service, can prompt discussion not only about the project, but also about how it may be conducted. Perhaps they have a familiarity with methods gained from work in a sector, or skills and knowledge about particular techniques and instruments, or connections with industry networks who might fund projects or provide resources. Discussions can be critical to optimising the shape of the project.

Understanding career time can also raise challenges. An executive worker with a very demanding work role may underestimate the demands of the program. Discussing the time commitments of their work situation can reveal their preparedness and capacity to engage in research education. A mid-career worker managing competing work and candidature commitments may identify ways to align their project with work related priorities. A part-time worker might be able to combine the demands of work with the challenges of research education. Useful discussions between supervisors and higher degree researchers could potentially revolve around considering time consuming tasks that may either be mutually beneficial or confounding to the realisation of research outcomes. Full-time higher degree researchers hungry to get a leg up to start their career, may wish to discuss how they may use time in candidature to gain work experience, and how best to frame their expected research outcomes to meet the potential demands of future employers (see also Chapter 11).

Supervisor time

Higher degree researchers require the support of their supervisors. As a result, access to suitable supervisory capacity is usually a condition of admission and ongoing candidature. While practices vary globally, at least two supervisors are often appointed to a higher degree researcher. At many universities, supervisors receive professional development and are required to conform with agreed policy frameworks in the conduct of supervisions.

The negotiation of time and the quality of contact and engagement is the concern of supervisory time. Each higher degree researcher will have varying needs over the term of candidature. Supervisors can enable and facilitate the higher degree researcher in a range of ways. When supervisory time is agreed to the mutual satisfaction of everyone involved, it supports ongoing good relationships through to completion.

Higher degree researchers identify supervisors in a range of ways. Sometimes they have previously met with academics, and after becoming familiar with their work requested their support in making an application. Other higher degree researchers may make ad hoc approaches to potential supervisors at their university of choice. In agreeing to supervise higher degree researchers, most supervisors are required to indicate that they have assessed the higher degree researcher as suitable, will continue the supervision through candidature, and feel confident to supervise the proposed research. Before agreeing to take on a new higher degree researcher, it is important to consider the time available based on the current workload.

The demands on supervisors during candidature can vary. At the start of candidature, most supervisors will discuss expectations with higher degree researchers. They will agree on how often they will meet, and how they will manage the review of work and progress. Over time the level of contact and roles of the various supervisors can change.

Supervisors and higher degree researchers may wish to renegotiate roles over time as higher degree researchers become more independent and phases of work roll out. This usually leads to conversations around who will take the lead on key tasks such as supporting the development of laboratory techniques, accessing resources and samples, reviewing key literature, consideration of methods, and development of methodology.

One of the key concerns for higher degree researchers is receiving timely and relevant feedback on research and written work. Be clear about the time required for the review of work, and the role of each supervisor in the process. Discuss how these timelines may vary depending on the amount and frequency of requests for work to be reviewed.

Candidature time

Supervisors are responsible for explaining to higher degree researchers how to manage their candidature time in line with college or university award requirements. As researchers, you will also need to consider relevant compliance and progress requirements. Management of candidature time can be supported through the use of project management tools such as timelines, publication plans, and compliance checklists.

Discussions between supervisors and higher degree researchers about candidature time are vital when there are any concerns about progress to completion. Normally, the expected term of candidature is set out by the awarding university. However, as supervisors, you may have a preferred approach to achieving completion. You also need to account for any expectations of higher degree researchers about candidature time based on their personal circumstances or future plans or commitments.

Evaluation of progress needs to be a routine and transparent part of managing candidature time (see also Time Management below). If progress is slow, supervisors should carefully consider if higher degree researchers need to be pushed to continue to make progress or be encouraged to take a break. Supervisors often develop an ability to celebrate little wins along the way that encourage progress, and craft feedback to recognise effort. It can help to work from an early stage with your higher degree researchers to normalise expectations of high levels of critical feedback designed to stimulate deeper thinking and quality outputs.

Time management

Supervisors will often use a timeline to assist with higher degree researcher time management. Universities

usually expect higher degree researchers to establish and maintain a living timeline for completion that can be shared regularly and discussed with supervisors. Progress evaluation cycles can act as a prompt to update timelines. The elements included in the timeline may change over time and all parties should be open to reviewing and revising requirements as circumstances of the candidature change.

Timelines articulate the steps involved in realising completion. Supervisors are aware of the steps involved and the time that each requires. Higher degree researchers need to know if supervisors think they have not allocated enough time on their timeline for ethics approval, or completion of a cycle of data collection or analysis, or if something is missing. Commonly time for reviewing work, and editing may be left out, but should be a consideration in the timeline.

Timelines can be used to encourage students to generate writing from the very start of their candidature. “Writing up” at the end is a risky practice and impractical for those pursuing a thesis by published paper. Continuous writing throughout the candidature allows for iterative skills development. Written tasks need to be featured within timelines. Higher degree researchers can be helped to appreciate that thesis writing involves writing and reviewing by making time review cycles visible on their timelines.

The sharing of time constraints is an important feature of time management (see Life time above). Key time constraints to record on the timeline are maximum candidature, scholarship, and visa duration. Supervisors leave and workload can impact their availability to support higher degree researchers. Informing higher degree researchers of times of potentially reduced availability will help them to manage their timelines more effectively. Equally, higher degree researchers should record their own holiday plans and other commitments and build these into their progression plans. An average of four weeks leave per year for all is strongly encouraged.

Opportune time

Opportunities will arise for higher degree researchers during candidature. The challenge is to take the opportunities that align best with candidature priorities. Together supervisors and higher degree researchers should plan out the best use of opportunity time. Supervisors can help in the identification of the opportunities that will advance higher degree researchers’ research projects, capacity development, and preparation for transition for work after graduation.

Opportunities can offer direct and indirect benefits for the higher degree researcher’s project. Direct benefits come from such things as attending induction sessions, engaging with supervisors, and participating in research meetings and seminars. Those with less direct benefit might include joining article publication review groups, representing students on committees, and giving tutorials or guest lectures.

Industry engaged research education is popular globally. Higher degree researchers in some countries are prompted by funded programs to consider internships and work-based mentoring programs. There is usually flexibility and capacity for supervisors and higher degree researchers to plan the nature and timing

of internships. Supervisors may be influential in identifying suitable mentors, internships, or industry linked projects. Such opportunities can help higher degree researchers to build their own research networks and communities.

Supervisors can help higher degree researchers find the right balance between engaging in extension opportunities and getting the research done. They assess the value of opportunities for higher degree researchers' development while accounting for their candidature and career progress. While encouraging higher degree researchers to enhance their resumes and develop new skills is important; this always needs to be balanced against time to completion.

Apply these ideas in your practice

A workbook is provided below that allows you to document your experiences of the six concepts of time. Below we offer some ways that you might wish to use this workbook in your supervisory practice.


In the Reference Materials box below, use the workbook to:

- think about what the concepts of time mean for you
- invite one of your higher degree researchers to complete the workbook
- discuss with your higher degree researcher a concept of time of concern
- consider the best use of your supervisory time.

Reference Materials

- Workbook – Notions of time and HDR supervision [PDF document]

Additional Resources

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

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Websites


9 things you should consider before embarking on a PhD

10 tips to finishing your PhD faster

Trainee Tuesday: Treat your PhD like a job

Treat Graduate School like it's your day job

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3. COLLABORATION AS A SUPERVISORY PRACTICE

Christine Bruce and Susan Gasson

Why read this chapter?

Collaboration is a key to successful supervision, ensuring rich engagement and exchange.

Discover how to initiate and maintain strong collaborative research networks using the elements of a collaborative research framework, including:

- trust and respect
- informal, formal and sanctioned networks
- inclusive, innovative, inspiring and informing outcomes.

Then, consider building the two elements of **collaborative capacity** in your higher degree researchers:

- **distributed leadership**
- **seven faces of the informed researcher.**



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentssupervisors/?p=77>

This chapter is informed by a collaborative research culture framework that the authors developed and have applied in recent years (Gasson et al, 2020). The framework has been used in workshops locally and globally, with **collaborative capacity** being the most recent addition to the framework (Aisoli-Orake et al; Maybee et al, 2022). Familiarity with the framework will allow you to consider collaborative practices that may enhance supervisory relationships, the higher degree researcher experience and the progress of the project.

Elements of the collaborative research culture framework

In this chapter, we introduce and illustrate the elements of the collaborative research culture framework, and provide examples of its application in supervisory practices. These practices are designed to enhance the research education experiences of your higher degree researchers and allow you to manage some of the workload challenges associated with supervision. Through discussion of examples, you may see practices that you are already using, or that you would like to try in the future. Figure 3.1 illustrates the elements of the framework to be discussed.



Figure 3.1 The Elements of the Collaborative Research Framework by Susan Gasson and Christine Bruce, used under a CC BY-NC-SA 4.0 licence

The roots of collaboration – Trust and respect

The capacity to build trust and respect with your candidates is a valuable supervisory practice. In this

section, we explore how supervisors can build trust and respect to maintain a long-lasting relationship. This will ensure that you and your candidate(s) harness the power of your combined knowledge and expertise to realise the richest possible outcomes. These qualities are equally important in other research collaborations.

Establishing trust and respect involves providing a shared safe space where you and your higher degree researchers can engage in research discussions and activities. Establishing shared understandings and negotiating expectations will assist in realising that space. Potential candidates and supervisory panel members can be found in your immediate work or research environment as well as beyond. Good collaborators value sharing research ideas, finding value in others' interests and ideas, and having different perspectives inform their evolving research and supervisory practices.

Collaborators from other disciplines may be needed on the supervisory team. You will need to work with them to find a common language that allows you to meaningfully share ideas and concepts. Multidisciplinary supervisory panels will be alert, and ready to address variations in the use of syntax, methodologies, literature, etc. Supervisory panel members can also offer statistical, technical, or other specialist expertise. Consider the need to augment panels with those external to the academy. These external supervisors may be approached at professional conferences or industry seminars or other industry engaged research contexts.

Not every person will be suitable as a supervisor, or candidate, or offer new or relevant research opportunities. To explore collaborative opportunities explore expectations for what you might do together and when. Be realistic about the supervision capacity available to invest in the research proposed. Look for reciprocity, evidenced by an equal commitment to the research. Perhaps you take turns setting up meetings, exchanging information, or responding to draft proposals. Be open about the process you follow in considering a new candidate or supervisory panel member. And, be honest if you are not interested in progressing the connection, or do not wish to follow up further.

The fields of collaboration – Informal, formal and sanctioned

Supervisors have opportunities to welcome higher degree researchers into a range of networks. They in turn may have networks that may be of value to you. In planning to build networks with a higher degree researcher it may be useful to consider the three fields of collaboration (i.e., informal, formal, and sanctioned).

The informal field can be a single casual conversation, with no expectation of further contact. Such conversations may be wide ranging. If considerations are of interest, and contact is easy to maintain, they may continue over weeks, months or years as you explore topics of interest as time allows. Strong friendships can result from contact within the informal field.

Formal fields include regular meetings or gatherings. Weekly catch ups with your lab group, cohort

meetings of researchers, and peer reading groups. Formal discussions are usually based on agreed agenda items or terms of reference. Because of agendas and meeting protocols you can be assured that those attending have a shared purpose for the gatherings, and expected topics of interest.

Sanctioned networks are those that are informed by signed agreements. A Cotutelle or double degree agreement that guides engagement with a higher degree researcher enrolled across two universities would be an example of this. Another would be a grant or scholarship agreement that may guide the terms of funding and managing a research collaboration. Such agreements may define the scope of work, the participants, and the dissemination of research outcomes. While there is always latitude in meeting and collaborating a sanctioned network will be informed by agreed timelines, budgets, collaborators, and contributions.

Most researchers are likely to work across all of these fields, and perhaps work with the same or different researchers as you move across the three fields. In some disciplines, supervisors will routinely enable new researchers to participate across these fields. In other disciplines, supervisors may manage participation in fields in a more measured or incremental way.

Granting or being granted access to fields may be related to the acculturation of health and safety protocols, codes of conduct or other research related expectations. Supervisory capacity to guide others in making collaborative connections and contributions is important. Explaining expectations about authorship or storage of data or licensing of access to findings should occur when relevant and timely. In formal and sanctioned fields consider your role in guiding the alignment of higher degree researcher contributions within the broader agendas. Ensure the higher degree researcher understands their role in contributing to agendas and informs progress of their research interests.

In inviting a higher degree researcher to join a network encourage them to take time to look up and review research outputs of key stakeholders in that network. Discuss with them how outputs frame researchers' teaching, and grant funding profiles. Consider together what being in a network means for their research and researcher development.

The fruits of collaboration – Inspiration, innovation and inclusivity

The fruits – inspiration, innovation, and inclusivity – describe the wide range of outcomes including grants and publication. Supervisors take time to explain to higher degree researchers the benefits and responsibilities that come with being associated with collaborative fruits. While many look forward to the publications and grants generated, the framework encourages accounting for less tangible fruits that the collaborative process will bring.

Inspiration and innovation are key fruits realised by the opportunity to participate in a community and engage in discussion. Discussions can generate inspiration, new energy and enthusiasm for the work at hand. Discussing ideas with others from disparate backgrounds, or with differing interests, can prompt

innovation, new approaches to the work and fresh ways of looking at a problem. By introducing higher degree researchers to a network, supervisors provide them with the chance to reach out and engage with wider communities.

By encouraging a spirit of inclusivity within a network, you can create opportunities for participation in research. As a key member of a network, you can ensure it is open to the ideas and contributions of all members. Inclusivity informs the negotiation of authorship and citation – enabling the fruits.

Collaborative capacity – Distributed leadership and the seven faces of the informed researcher

Supervisors can model collaborative capacity for higher degree researchers. Collaborative capacity involves two elements that make the researcher an active agent in the collaborative process. These elements are distributed leadership and the seven faces of the informed researcher.

Distributed leadership (Aisoli-Orake et al., 2022) is the first element of collaborative capacity. It is a form of leadership that overcomes power imbalances, empowering deeper engagement, and acknowledgment of contributions. Supervisors adopting a distributed leadership model can support others to demonstrate their areas of strength and delegate responsibility for leading activities that require those skills. Distributed leadership can be used to create opportunities to expose team members to different methods, conceptual frameworks, and practices.

The second collaborative capacity element is the informed researcher (Maybee, 2022). There are seven faces of the informed researcher detailed in Table 3.1.

Table 3.1 Seven faces of the informed researcher (Maybee, 2022)

Faces	Descriptions
Field Awareness and Communication	Communicating appropriately within professional networks in research communities
Information Sources	Appropriating relevant information from a range of formal and informal sources to inform research
Information Processes	Adapting information processes to inform personal and collaborative research needs
Information Organization	Organizing information to establish connections between research and information sources
Knowledge Base Construction	Engaging critically with information to understand areas of research
Knowledge Creation	Generating innovations and creating new knowledge through research, including approaches and solutions
Research Gifts	Making wise use of research for the benefit of society

These faces were adapted from the *Seven Faces of Informed Learning* (Bruce, 1987). They each speak to a different aspect of information experience in the research context. Researchers may operate across all seven faces. Others will use different faces in response to phases of their work, or in interaction with different people.

- The *Field awareness and communication* face is one to be kept in mind when trying to reach out across disciplinary silos or sectors. It is a chance to reframe existing information in ways that ensure accessibility and meaning for others.
- The *Information sources* face prompts consideration of a diverse range of information from forms of printed media to music, art and other cultural artefacts as well as digital resources.
- The *Information process* face invites thinking about the personal heuristics of research collaborators. What are their styles and preferences as they engage with information? This may lead to different mechanisms in the research process. Perhaps information artefacts are placed in a common space so everyone can view them, or in a drop box that is set up for sharing.
- *Information organisation* is concerned with ensuring that stored information is easy to find and understand, and connected to relevant projects. In the digital world this may be about setting up files and file names that can be pulled together into folders that make information easy to find.
- *Knowledge base construction* is concerned with taking existing information and considering its meaning and relevance within a particular area of interest. An example of this would be collecting patient files. The construction aspect may account for an interest in the age range of patients and the term of their illness. This would allow for analysis to answer a question about age as a factor in predicting the severity of a patient's illness.
- The *Knowledge creation* face is concerned with taking the results of analysis and finding novel ways to interpret them to realise solutions or findings. Here the ability to review the outcomes of analysis and to share that across a diversity of scholars may prompt new approaches. A geographer may suggest revisiting the spread of a disease based on their having been able to access information about patterns of travel amongst those who contracted that disease. This may reveal different strains of the disease that may, in addition to age, impact the severity of the illness.
- *Research gifts* can take numerous forms; their purpose is to transform new knowledge in ways that realise social benefits. Examples of gifts include a new application that delivers weather alerts effectively, new prescription drugs, or an improved electric car design.

As supervisors, we need to think about how to use these faces. Discuss with your higher degree researcher and other panel members' faces that may assist with their current phase of candidature. Explore with the higher degree researcher and supervisory panel their experiences of the faces, or concerns about how the faces may play into the research plan. Be ready to prompt them to try out a face or to acknowledge where one has been used to good effect.

So what now?

As supervisors, you will make many decisions in working with a higher degree researcher. By conceptualising the supervisory process as a formal research network you can create opportunities for higher degree researchers to engage with different fields. Use available opportunities to introduce them to other higher degree researchers and other academics. Use engagements with other supervisory panels to extend your practices, and ensure that supervisor panel members work together to manage the workload associated with the higher degree researcher.

Peer-to-peer writing groups can raise higher degree researcher awareness of the standards of writing expected at different stages of candidature. This also provides a mechanism for the review of early drafts, giving others the chance to learn to critique and releasing you for higher level critique.

Research community meetings will allow access to other supervisory panels, giving higher degree researchers a chance to see different supervisory styles and other perspectives on research work. Normalising the process of receiving critical feedback from a range of perspectives can improve rapport and the responsiveness of a higher degree researcher to the iterative and recursive process of developing a research thesis.

Building collaborative capacity in your higher degree researcher will empower the student and build their confidence, giving them tools needed to realise research independence. While ensuring that networking does not distract them from their research and timeline, you can mentor them to engage with broader networks. Perhaps they hope to work overseas on graduation or to conduct further studies in other contexts. Help them to consider how to build networks to facilitate their current research but also to prepare for their transition into the workforce as a researcher on graduation.

Your role as supervisors is not to introduce higher degree researchers to all your networks, or to source all possible people that might assist them. However, supervisors ensure higher degree researchers realise the power of networking, and have the confidence and skills to engage in networking as they need to.

The faces of the informed researcher can assist when a higher degree researcher is struggling to progress their work. Perhaps they need to consider using another face, or have applied a face poorly and need to revisit the work. Appreciating the information literacy tools available to inform their research work can be empowering, encouraging independence and the analytical problem solving skills essential for generating quality research outcomes. Encourage them to take full advantage of their informed research network by drawing on the service providers from the library, information technology, and e-research team (see also Chapter 9 and Chapter 10).

Some applications

Creating cohorts

Supervisors encourage cohort meetings (groups of higher degree students and supervisors) where research higher degree researchers can discuss common interests with a range of academic staff. The size of cohorts varies, but larger cohorts have greater potential capacity to serve the needs of their members. To grow a cohort, colleagues might agree to focus on common topics, common methods, and researchers drawn from beyond the immediate university or research education context.

Cohorts come in many shapes and sizes. They can operate successfully face-to-face, virtually or within a hybrid model. By making cohorts visible they can attract new members and build capacity. Simple things like naming the cohort and badging its program of activities will give the cohort a presence. Members will engage better if they are involved in the design of the program of activities. Rules for the cohort can be shared that ensure members realise it is a safe space where novice researchers and untried ideas can be tested.

A rule might be that members need to share and celebrate successes and failures. Failures are to be treated positively as learning opportunities and evidence of members' pursuit of excellence. To encourage this you could normalise members' sharing of their research work. Dedicate time during each meeting for members to share updates on their research progress. Sharing progress will allow members to learn about others' research experiences, and help them to benchmark their own performance.

Mentoring and internship

Mentoring and internships allow researchers to access networks in industry, government and the community. Many higher degree researchers will pursue careers beyond the academy and all researchers will seek social impact. Connections made through mentorships and internships can help higher degree researchers learn about different workplaces and identify new research opportunities.

Mentees are encouraged to look actively for and engage with a range of people, open to new mentoring contexts. Mentors might offer to meet once to discuss career prospects or may engage longer term facilitating different opportunities. Ideally, institutions will provide resources and/or training to explain the roles and responsibilities of mentees and mentors and facilitate engagements.

Research degree designers and policymakers around the world are increasingly encouraging higher degree researcher to engage in internships (McGagh, 2015; Valencia-Forrester, 2019). Internships differ from paid work in that they involve the researcher engaging in activities that would not normally be the province of paid staff or be essential to the continuity of the workplace. Well-resourced programs may source and advertise internship opportunities, others may provide advice to supervisors and higher degree researcher on establishing internships. One internship model involves three months of full-time work. The program

of work designated for the internship allows the researcher to apply their research skills within an industry, government or community workplace. Arrangements for the payment for and acknowledgement of internships vary.

Peer reading and writing networks

The research education experience can be a very isolating and lonely time. In pursuing an individual contribution to knowledge, the novice researcher can feel alienated from family and friends as they focus on completing their work under severe time constraints. Building peer networks with other higher degree researchers can be a valuable source of community. In such networks, the higher degree researcher begins to normalise the unique demands of their candidature journey. Shared experiences and understandings can create supportive contexts that allow peers to bond and establish valuable learning communities of practice.

Peer networks can offer novice researchers their first opportunities to review others' work. Not only does this provide a chance to learn to review, but also to gain exposure to others' research and benchmark performance. Reading or methods networks can provide a way for researchers to share what they have learned. Network sessions can be designed to allow members to hone their teaching skills, and rehearse debates and discussions they wish to have with their supervisors. Exposure to different disciplines, methodologies and literature in network sessions can help researchers to build a deeper appreciation of the range of approaches that can lead to the creation of new knowledge.

Authorship and publication

Opportunities for the dissemination of research findings or to raise awareness of the work underway to encourage review and support are to be encouraged. As supervisors speak early and as often as needed about authorship arrangements. Ensure students understand the requirements and stipulations around being an author and the responsibilities associated with being an author. Acknowledgement of contribution is part of the code of practice for research and is key to collaborative sustainability.

Now do it


Use the framework provided in Figure 3.1 to map out your current key research networks. Think about the health of those networks by considering the levels of trust and respect demonstrated within those networks. What fields are you and your students working in? How could you transition between fields should you wish to? What inspires you or your students? How can you ensure that your research team is open and inclusive? Is there more you can do to build rapport?

If you are looking to build capacity, consider what networks are available to you, or those you might find useful, and consider building new or refining current networks. Create a plan to form a mentoring

community or peer-to-peer reading group, to help you make time to prioritise your research and work through any challenges that may be hindering your progress.

Use this *What happens if I collaborate* workbook to document your collaborations and to facilitate discussions with your higher degree researchers about building collaborative capacity.

Additional Resources

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CAPACITY BUILDING

4. ESTABLISHING A SUSTAINABLE HDR WRITING ECOLOGY

Juliet Lum and Susan Mowbray

Why read this chapter?

Writing is an integral aspect of candidature; it's also an area many Higher Degree Researchers, and supervisors, find challenging. This chapter presents academic or research writing development within a broader ecological model of higher education. It outlines several initiatives you, as a supervisor, can offer or recommend as additional avenues to help strengthen your Higher Degree Researchers' writing and engagement. These avenues sit at different strata of the writing ecology and include:

- providing co-authoring opportunities
- facilitating writing groups
- developing peer-led groups
- running writing retreats
- developing an 'always available' bank of online resources.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentssupervisors/?p=92>

Introduction

Traditionally, Higher Degree Researchers (HDRs) would rely almost exclusively on their supervisors to provide all the guidance, training, advice and feedback needed to complete their degrees, particularly in those jurisdictions where the PhD has no coursework component. Today, however, Higher Degree Researchers have access to a much broader range of support, traversing departmental, institutional, and

national boundaries. In this chapter, and drawing on the work of Bronfenbrenner (1977), we conceive this broader range of supports as being part of a wider writing ecology. For us, an ecological model of academic writing support recognises the importance of establishing social avenues of writing support. These avenues can promote a sense of belonging and community; they can also facilitate Higher Degree Researchers' engagement and progression. Here we describe five avenues you, as a supervisor, may implement as additional avenues to help strengthen Higher Degree Researcher' writing and engagement.

Introducing Bronfenbrenner's Ecological Systems Model

As Graduate Researcher Developers, we see supervisors and ourselves as part of a larger learning – and more specifically, writing – ecology (Bronfenbrenner, 1977), of which the Higher Degree Researcher is at the centre. Our notion of a writing ecology is informed by Bronfenbrenner's (1977) ecological model of development.¹ In his model, Bronfenbrenner positions the individual at the centre of four interrelated and nested systems – the micro-, meso-, exo- and macro-systems. These complex, interacting systems capture the two-way inter-relationships and interactions of the individual within their immediate and wider contexts. The micro-system denotes the individual's immediate context i.e. the home, family, place of work, school, and community. The meso-system captures the interactions between and across two or more micro-systems e.g. home and work. The exo-system relates to contexts that are more removed from the individual but may still be influential on or influenced by the individual e.g. wider societal factors/policies. The macrosystem, as the broadest context in the model, encompasses the institutional systems of society (e.g. economic, educational, political and legal), as depicted in Figure 4.1 (Rosa & Tudge, 2013).

1. Bronfenbrenner's ecological system model evolved over time from the Ecological Systems Model to the Bioecological Model, as detailed in Rosa and Tudge (2013).

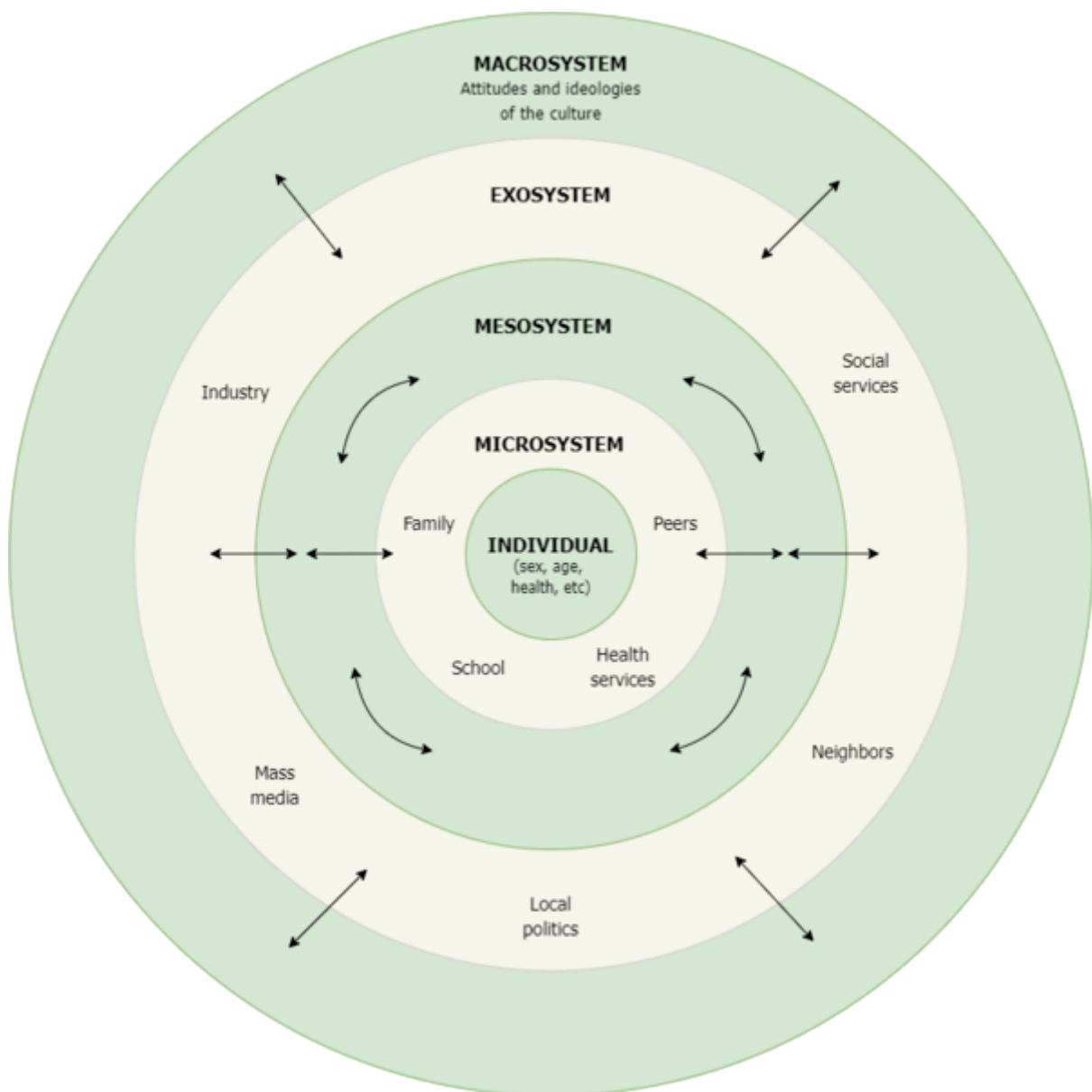


Figure 4.1 Bronfenbrenner's Ecological Theory Model by Abbey Elder, used under CC BY-SA 4.0 licence

Here, we conceptualise these interrelated systems within the context of doctoral education and Higher Degree Researchers. Specifically, we see the micro-system as Higher Degree Researchers' interpersonal connections (e.g. Supervisor(s), Graduate Researcher Developers, peers); we see the meso-system as the institutional supports available to Higher Degree Researchers (e.g. 24/7 online resources, writing retreats, Show Up & Write sessions, Thesis Writing Groups, workshops, collaborative writing); and we see the exo-system as the wider doctoral writing community (e.g. (inter)national conferences, blogs, symposiums, Special Interest Groups/Communities of Practice), with Doctoral Education policies and higher education values and expectations overarching each system as the macro-system (see Figure 4.2). Separately and in combination these areas (in)form the writing ecology in which we work.

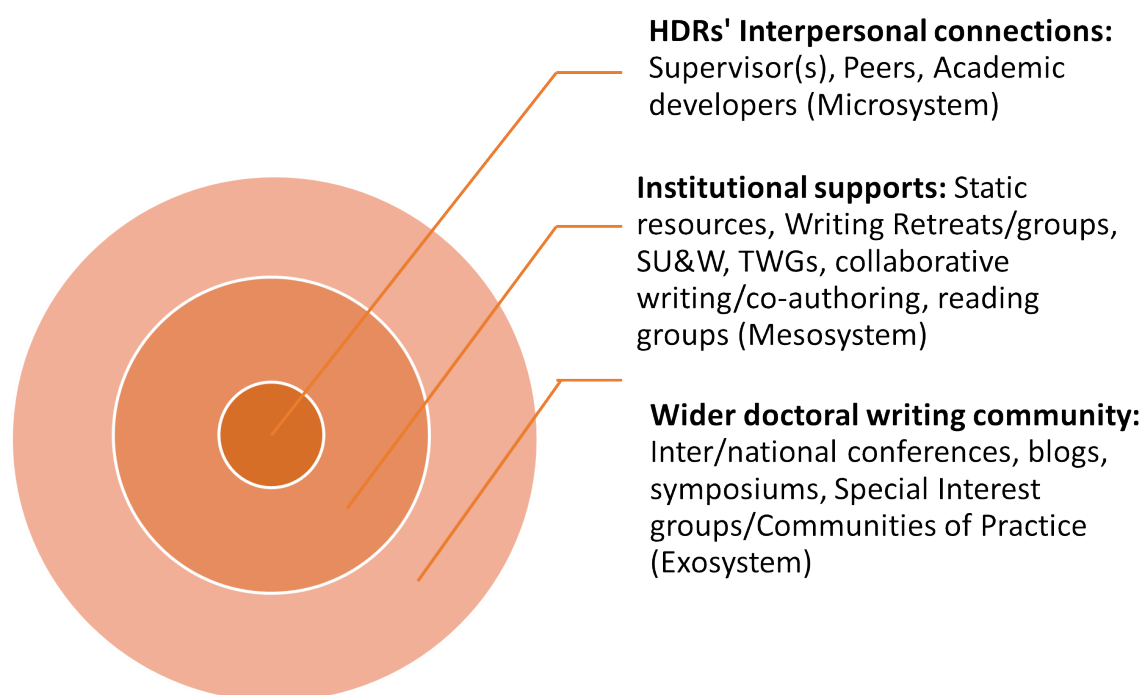


Figure 4.2 HDR Writing Ecology by Juliet Lum and Susan Mowbray, used under a CC BY-NC-SA 4.0 licence

Developing a supportive writing ecology

The initiatives we describe below have proven to optimise the writing support provided to Higher Degree Researchers at our institutions. As a supervisor, and depending on your context, you may have more or less capacity to make these supports available to your Higher Degree Researchers. For instance, some of these initiatives will be accessible to Higher Degree Researchers regardless of location or institution; others may require some initial set up by institutional staff; and yet others may run as special events on a semi-regular basis, e.g. annually or once a semester. In the absence of dedicated Graduate Researcher Developers to run more frequent events or facilitate regular groups, we recommend that you collaborate with colleagues such as fellow supervisors, department/faculty Higher Degree Researcher directors, library or writing centre staff; namely, others who make up your Higher Degree Researchers' writing ecology.

Co-authoring as part of the micro-system

Publishing is important, especially for Higher Degree Researchers aiming for academic positions post-PhD and *co*-authoring publications are recognised as a very effective way to fast-track Higher Degree Researchers' writing confidence and identification as fully-fledged researchers (Inouye & McAlpine, 2019; Kamler, 2008; Mantai, 2017; Thomson & Kamler, 2012). Co-authoring with supervisor(s) is a natural way to expose Higher Degree Researchers with no academic publishing experience to steps in the publishing process such as selecting journals, complying with author guidelines, negotiating author order, dealing with

rejection, corresponding with editors, responding to reviewers' comments, and proofing galley copies. You may also consider providing opportunities for your Higher Degree Researchers to co-author with other Higher Degree Researchers, which has been proven to increase their writing and collaboration skills and foster their personal epistemology (Lam et al., 2018).

Facilitated writing groups as part of the meso-system

Synchronous (real-time) online gatherings enable groups of geographically dispersed Higher Degree Researchers to meet, see and hear each other, and to jointly compose and comment on documents in real time. Videoconferencing and webinar tools such as Zoom, Skype, Google Meet, and Microsoft Teams mean Higher Degree Researchers who were previously unable or unwilling to meet in person can now join any kind of group that would traditionally meet in face-to-face mode.

Videoconferencing software is particularly well suited to small (fewer than 8) group meetings, such as doctoral writing groups, group supervision meetings, reading groups/journal clubs, and peer accountability groups. Online Higher Degree Researcher groups that meet regularly in real time tend to be more effective in delivering learning benefits because all members are expected to contribute in some way, such as preparing a draft for peer feedback, responding to that feedback, contributing to a discussion of a set reading, responding to another member's text, announcing and reporting on one's own work goals, giving advice or sharing experiences on a particular candidature issue, and so on. Real-time video access also discourages 'lurking' (passively observing without ever contributing) during gatherings or turning up only when one feels like it; in other words, synchronous online group meetings promote engagement.

Both of our institutions run online writing groups for doctoral students. Participants value the opportunity to share their work with other members in a familiar and comfortable space and have reported that they experience "less negative judgment and criticism." The opportunities to have productive discussions, give and receive helpful feedback and "learn from peers" while "being accountable to each other by reading through our writing and pinning our advice to specific needs of each student" are key aspects and opportunities gained from participating in the sessions. In addition to benefitting from peers' feedback, gaining different perspectives on their writing, and reviewing others' work, online group participants value learning with and from fellow Higher Degree Researchers, rather than alone with an online video or 1:1 with their supervisor. Online writing groups also help to reduce isolation while simultaneously promoting Higher Degree Researchers' sensibilities of the expectations of academic writing.

Many of the members of the online Higher Degree Researcher groups we run are part-time Higher Degree Researchers due to full-time work and/or parenting/carer duties. These candidates have even fewer opportunities than on-campus Higher Degree Researchers to come into contact with peers; for these students, interacting regularly with other Higher Degree Researchers who can empathise with the

challenges of juggling research with other responsibilities is particularly rewarding. It is also worth noting the online Higher Degree Researcher groups are not restricted to running in business hours or to candidates who identify as off-campus. Nor are they limited to one format; facilitated writing groups at our institutions include fortnightly Thesis Writing Groups (TWGs) and weekly (two hour) and first Saturday of the month and daily Show Up & Write sessions. Flexibility in delivery time, mode and group make-up are key factors in sustaining the momentum of each group and/or session.

Peer-led groups as part of the meso-system

Enabling Higher Degree Researchers to run their own ‘engagement rings’ such as peer support/accountability groups, study groups, writing groups and/or reading groups also supports Higher Degree Researchers’ engagement. Kumar and Atkinson (2017) report that peer study groups promote social networks and safe spaces to ask “beginner questions...how to structure the writing, how to write a lit review...which they would not ask their supervisors” (p. 7). A member of an online peer accountability group at one of our institutions reported on “Aha!’ moments” stating that even though she had received similar advice from her supervisor, “it wasn’t until [another group member] mentioned it because she had just come off interviewing a whole bunch of people so she was sort of at that phase of her thesis, [that] it made more sense.”

Peer groups run by HDRs will often form organically once students from the same department or with similar research interests or candidature experiences meet each other at seminars, conferences, writing retreats and other events. However, for part-time Higher Degree Researchers and/or those rarely on campus, such opportunities to encounter peers are rare. Additionally, some may attend Higher Degree Researcher events and seminars but lack the confidence or cultural capital to form a peer learning group. In these cases, the institution or you as a Supervisor can play an important role in initiating such groups. For some groups, all that is needed to initiate the group is to introduce Higher Degree Researchers to each other and provide a tool kit (such as this one for writing groups or this one for accountability groups) with instructions on running the group; for other groups, you or a Graduate Researcher Developer at your institution can facilitate the first 2-3 meetings and then let the Higher Degree Researchers run the group themselves.

Writing retreats/intensives as part of the meso-system

Writing Retreats/Intensives provide Higher Degree Researchers with an extended dedicated time and space to significantly progress their thinking and writing. Writing retreats/intensives aim to minimise distractions and maximise quiet time for Higher Degree Researchers to write in an environment that includes opportunities to stimulate thinking and productivity. Writing retreats can be structured or

unstructured, and can be a residential (overnight), on campus, or online experience. A structured writing retreat, for example, may include the following: sessions at the beginning, middle, and end of each day where Higher Degree Researchers report and reflect on their goals for each session; workshops on a particular aspect of doctoral writing e.g. making your argument, thesis structure, writing a strong introduction; bookable 1:1 consultation times; and scheduled breaks for Higher Degree Researchers to socialise. The workshops may be mandatory or optional and/or offered alongside the independent writing sessions. In unstructured writing retreats, the focus is on Higher Degree Researchers independently progressing their work in morning and afternoon writing sessions. Regardless of the writing retreat's form, it's important to offer short activities to refresh Higher Degree Researchers' energy levels in between the independent writing sessions. These may include a mindfulness/meditation session, a walk, wrist yoga, exercise session or similar.

Facilitating online writing retreats can be a more cost-effective and inclusive option than running residential retreats. One of our institutions ran several 3-day online writing retreats over Zoom during the COVID-19 pandemic. While “retreat” may be a misnomer if participants are joining from their regular study location, extended online events can nevertheless provide an institutionally sanctioned reason/permission for participants to retreat from regular *activities* to work on their thesis, encouraging them to activate an out-of-office email auto-response, and to cancel appointments for the duration of the retreat as they would for an out-of-town conference. This provides the headspace to devote to writing. The success of writing retreats lies in the co-presence of others engaged in the act of writing and the opportunity to normalise one's experience by interacting with other Higher Degree Researchers; these can be achieved at online writing retreats by requesting that all participants leave their videos on during writing hours and by increasing the social elements of the event, such as “lucky door prizes” drawn at random points in the retreat with prizes such as thesis writing books, introducing facilitators in a less-formal way (e.g. showing a pet on screen, sharing a life hack), and facilitated group fitness and/or mindfulness sessions before or after the lunch break.

Online resource banks as part of the meso- and exo-systems

All of these avenues can be supplemented with a bank of online resources. Making resources available online 24/7 provides Higher Degree Researchers with an ‘always available’ point of reference; it can also promote Higher Degree Researchers' autonomy. Developing a ‘bank’ of free-to-access static training materials such as online manuals, video tutorials, ‘banks’ of collated materials on key areas such as the methodology, literature review and discussion chapters and recorded lectures can provide much-needed, easily accessible instructional material. Some helpful sites include The University of Manchester's Academic Phrasebank, Purdue University's Online Writing Lab (OWL), and research guides at your own university, such as Macquarie University's Subject and Research Guides. Similarly, PhD-focused blogs and social media groups can function as a proxy for a community of practice, as advice and individual PhD

research experiences can be shared and commented on by others engaged in the same endeavour (Guerin, Aitchison, & Carter, 2020). Subscribing to popular PhD-focused blogs ensures the latest post is delivered straight to your email. These blogs also curate their content so you can easily find all the relevant posts to a particular area in one click. Some of the blogs we regularly access are Patter, Doctoral Writing, Explorations of Style, and Research Whisperer. Links to other blogs and video collections relevant to doctoral study/supervision can be found at the end of this chapter.

Caveats and challenges

Creating opportunities for social and peer learning that acknowledge and cater for the different locations, schedules, preferences, and degrees of access of today's Higher Degree Researchers is feasible but comes with its own set of challenges. Sufficient staff need to be willing and available to work to facilitate online writing sessions, groups and retreats and out-of-hours meetings. Similarly, it can prove very difficult to find a mutually convenient meeting time for online groups comprised of Higher Degree Researchers who are full-time workers or located in very different time-zones. Running webinars and live-streaming presentations may require someone (e.g. another staff member or perhaps a non-participating student) in addition to the facilitator to attend to the technology and online attendees' activity, particularly for hybrid sessions where there are some Higher Degree Researchers attending in person and others online. It can also be challenging to build up a network of presenters to reliably deliver monthly information sessions. This means alternative plans need to be ready. Communicating via videoconference can prove challenging in larger groups and when there are connection issues. Peer-led groups require a certain amount of training or at least briefing of participants and tend to work only with Higher Degree Researchers who are pro-active, self-disciplined and committed to each other's progress to keep groups actively engaged beyond the first few meetings.

Offering the kinds of writing support suggested above may be challenging for supervisors with little or no centrally provided Higher Degree Researcher support, so a team approach is highly recommended: individual Faculties, Departments or Schools will usually appoint a staff member to oversee Higher Degree Researcher training, so working with that person and other colleagues on the initiatives would increase feasibility and sustainability. Another challenge – regardless of central provisioning – is encouraging your Higher Degree Researchers to access available resources, training and support. The vignette below illustrates how this could be done in the context of a regular supervision meeting.

Conclusion

The importance and value of different writing initiatives in helping Higher Degree Researchers progress cannot be underestimated. Creating a welcoming writing ecology that offers HDRs various modes to engage in is an investment in building Higher Degree Researcher communities within and across the wider institution. Such communities can help sustain Higher Degree Researchers' motivation, facilitate their

progression in the doctoral undertaking, promote retention and help to enhance their experiences. They can also involve Higher Degree Researchers, and by extension, their supervisors and the broader institution, in promoting a wider community of thinking and learning people.

Vignette

The Supervisor “Professor Mitchell” and Higher Degree Researcher “Sam” have spent the last 45 minutes discussing data analysis etc. There are 15 minutes left of the consultation hour.

Supervisor: That sounds like a good plan. So, how are you going with your writing? I notice you haven’t sent me anything to read for the last few months.

Sam: Oh, I’ve been reading a lot. ... Actually, I’ve been struggling to write anything on my thesis. There’s so much to read and learn! When I read a paper, it just leads to other papers which sound important to read.

Supervisor: Ah yes, it’s a bit like the infinite social media scroll, isn’t it! There’s always more literature to read and review; you’ll never reach the end of the recommended reading list!

Sam: Oh no! Really?

Supervisor: Yes, but it doesn’t mean that you can’t start writing. You actually know more than you think, and you do have something to say. It sounds like you might find a research writing group helpful, to motivate you with your writing.

Sam: What’s a research writing group?

Supervisor: It’s where a group of researchers – in your case, Higher Degree Researcher candidates – meet regularly to give feedback on each other’s drafts: the group focuses on one member’s writing each time. In fact, two of my other Higher Degree Researchers have been expressing an interest in starting a group, so I can get you in touch with them.

Sam: Thanks, Prof Mitchell. I’m not sure I’m ready to join one of those groups quite yet as I haven’t been working on a draft in a while. There are so many things going on in my life I can’t find time for my writing! My kids need me to drive them around to activities, my parents often call on me to do jobs for them, and then there are so many emails to respond to from the university.

Supervisor: That sounds hard, Sam. You’ve got a lot on your plate... I wonder whether you might like to join the weekly Show Up and Write sessions that a couple of my colleagues are hosting on Friday afternoons for Higher Degree Researchers and other academics in our department? Those sessions will give you permission to say no to other things and to switch off your email so that you can focus solely on writing for a few hours every week.

You can join online or in person. I attended several Show Up and Write sessions last year and wrote a journal article during that time!

Sam: Wow, that sounds like exactly what I need. I'll definitely sign up!


Supervisor: And I'll email you some of my favourite blogs about research writing and doing a PhD. Oh, don't worry: they're very light compared to the other readings we discussed earlier in today's meeting! They're the sort of thing you can read while waiting for a train or your kids. I think you'll find the advice they give really useful.

Sam: Okay, sure. Thanks so much, Professor Mitchell. All these are really great suggestions! I feel much more positive about my writing now.

Activity – To build and evidence your practice, as part of the meso-system:

1. What other avenues of support could you introduce at your institution to bring Higher Degree Researchers together, either face-to-face or virtually, to help build connections and progress their writing?
2. Are there internet technologies you could optimise to extend the avenues of support available to Higher Degree Researchers?
3. Brainstorm, by yourself or with colleagues, avenues of support you could offer to Higher Degree Researchers, either as a disciplinary or whole group. Here are a few to get started:
 - Monthly reading and discussion group
 - Monthly lunch club and presentation
 - Weekly 2 hour Show Up & Write session

Additional Resources

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

Websites, blogs and vlogs, as part of the exo-system

The University of Manchester's Academic Phrasebank

Purdue University's Online Writing Lab (OWL)

Macquarie University's Subject and Research Guides

The University of Auckland's Quick@ite tool

The Hidden Curriculum in Doctoral Education

Explorations of Style

Patter

Doctoral Writing

Thesis Whisperer

Research Degree Insiders

Helen's Word YouTube channel


Tara Brabazon on YouTube

Cecile Badenhorst on YouTube

Online PhD Groups

Online PhD-StayOnTrack Groups

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5. EARLY INTERVENTION: HELPING HIGHER DEGREE RESEARCHERS THRIVE THROUGHOUT CANDIDATURE

Anna Kokavec

Why read this chapter?

Sustainable higher degree research supervision requires a supportive and collaborative relationship between supervisors and higher degree researchers, which involves regular communication, clear expectations, and feedback. Higher degree researchers can face many challenges during their candidature which can impact their academic progress and well-being. When things do go wrong it is essential supervisors have the tools to identify problems early and provide appropriate guidance and support.

The **Graduate Research Engagement Assessment Tool (GREAT)** has been specifically designed as an early intervention communication tool to assist supervisors and higher degree researchers identify, assess, and problem-solve potential risks. The GREAT includes:

- self-assessment section to build higher degree researchers' self-awareness and problem-solve risk
- questionnaire and scoring criteria to identify and quantify risk
- opportunity to explore and request support
- step-by-step guide to give supervision meetings structure
- step-by-step guide to resolve challenges.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentsupervisors/?p=94>

Introduction

Sustainable research supervision is a multi-factorial construct that includes the creation of a supportive and inclusive research culture, the nurturing of students' intellectual and personal growth, and the responsible utilization of research resources. The overall aim of sustainable research supervision is to support resilient and socially aware higher degree researchers who can thrive in today's ever-changing academic world (Kaharudin et al., 2022).

Sustainable research supervisors put the well-being and advancement of their higher degree researchers first by encouraging teamwork, fostering critical thinking, and promoting ethical research practices. In this context, adopting a sustainable approach means prioritizing collaborative problem-solving, mentorship, and two-way communication (Allan, 2019).

Facilitating sustainable supervision through early intervention

Completing a higher research degree involves embarking on a 3–5-year journey that for many can be very rewarding. One of the notable highs of completing a higher research degree is the opportunity for significant intellectual growth. Higher degree researchers engage in deep exploration of a specific subject, which leads to expanded knowledge and expertise in their chosen field of study. There is the potential to make an original contribution and advance knowledge, which can be intellectually fulfilling and professionally rewarding (van Rooji et al., 2021). However, as with any journey, it is not unusual to encounter challenges along the way (Beasy et al., 2021). For example

1. **Goal-oriented challenges** revolve around differing opinions or priorities regarding research goals, performance criteria, methodology selection, or project milestones.
2. **Administrative challenges** relate to organizational or administrative aspects of research projects, such as defining roles and responsibilities, establishing reporting relationships, and clarifying decision-making authority.
3. **Interpersonal challenges** arise from differences in work styles, communication preferences, or personality clashes among researchers, supervisors, and/or team members.

The evidence suggests that if (or when) problems occur, early intervention on the part of the supervisor is critical to the success of a research project (O'Brien et al., 2008). It is essential that any challenges facing higher degree researchers can be identified early and appropriate strategies put in place to mitigate risk and support the higher degree researcher. By recognizing challenges before they become overwhelming, supervisors can empower higher degree researchers to proactively seek the necessary support, and resources, and make timely adjustments to their research plans and methodologies (Norton, 2011; Homer et al., 2021).

Facilitating sustainable supervision through effective communication

The relationship between higher degree researchers and supervisors plays a pivotal role in their academic and personal growth. Supervisors assume a crucial position by offering guidance, mentorship, and expertise, enabling students to navigate the intricate path of their research journey (Brownlow et al., 2023). Leveraging their knowledge, supervisors provide invaluable insights that shape the research project's trajectory, refine methodologies, and cultivate critical thinking skills (Satariyan et al., 2015).

Recent findings from a systematic review underscore the importance of fostering open, supportive, and frequent communication between higher degree researchers and their supervisors, as it directly correlates with student success and satisfaction. The consistency in shared work values, including communication style, interaction frequency, and adherence to timelines, is perceived by both supervisors and researchers as a measure of the strength of their relationship (Sverdlik et al., 2018). These key elements create a supportive and constructive environment where ideas can be exchanged, any challenges discussed and addressed, and knowledge shared (Berridge et al., 2010).

Incorporating effective communication practices into a sustainable supervisory approach can significantly impact the engagement and progression of higher degree researchers. When faced with challenges, actively involving higher degree researchers in constructive dialogues, and actively soliciting feedback fosters the development problem-solving skills, critical thinking abilities, and emotional intelligence (London et al., 2023).

Graduate Research Engagement Assessment Tool

The **Graduate Research Engagement Assessment Tool (GREAT)** is a multifaceted early intervention instrument that promotes open and effective communication and instils a sense of empowerment among higher degree researchers as they advance their studies. The complete GREAT tool can be divided into four sections and includes:

1. Self-assessment section to build higher degree researchers' self-awareness and problem-solve risk.
2. Risk assessment questionnaire and scoring criteria to identify and quantify risk.
3. Opportunity for HDRs to explore and request support.
4. Step-by-step guide for facilitating group discussion and staying on track.
 - Step-by-step guide for managing and resolving challenges.

For anyone looking to improve their communication skills, the GREAT is an invaluable communication resource, which has the capacity to significantly assist both supervisors and higher degree researchers throughout their collaborative research endeavours. Utilizing the GREAT affords supervisors and higher

degree researchers the chance to work together and proactively identify and manage challenges before they turn into obstacles that could jeopardize the project. A copy of the complete JCU GREAT form is available [Word document].

1. Self-assessment

The self-assessment part of the GREAT consists of six items. The aim is to develop self-awareness and accept responsibility for any challenges before they turn into roadblocks. Completing the self-assessment part of the GREAT can ensure supervisors and higher degree researchers are on the same page with respect to progress and expectations. A copy of the JCU HSSDP – HDR Student Self-directed Project Assessment form is available [Word document].

Items 1-4 are completed by all members of the higher degree research team and provide an opportunity for higher degree researchers and supervisors to reflect on:

- “How are things going?”
- The information provided by the university pertaining to the expectations of a supervisor and higher degree researchers.
- “What are my expectations?”

There is also an opportunity to brainstorm and problem-solve any challenges by thinking about possible options and outcomes before deciding on the best option for moving forward.

2. Risk assessment

Before completing item 5 “Do I need additional support?” the higher degree researcher is directed to completing a risk assessment. This provides an opportunity to build self-awareness and identify risk associated with six factors (i.e., physical health, social support, research engagement, mental health, personal wellbeing, and environment), previously shown to negatively impact higher degree researchers (Sverdlik et al., 2018). A copy of the JCU HSPRF HDR Student Potential Risk Factors Assessment Tool form is available [Word document].

The risk assessment contains 25 statements and statements are grouped according to the six factors. For each statement, the higher degree researcher must choose one of three options (Yes, No, Unsure). Each choice is weighted as 0, 1, 4, with responses deemed to suggest high risk = 4, moderate-low risk = 1, and no risk = 0. After reading a statement, the higher degree researcher is required to circle the response that best describes their circumstances. There are no right or wrong answers and the higher degree researcher can choose whether to show the completed form to the supervisor or submit it to the Graduate Research Office.

Scoring allows for six Factor scores and a Total risk score to be calculated. Total risk scores can range from 0 to 100, with a Total score above 12 deemed to suggest the higher degree researcher may be at risk.

After completing the risk assessment, the higher degree researcher is asked to reflect on responses with a risk score of 1 or 4 and use the information provided in the risk assessment scoring criteria as a guide to determine whether a meeting with the primary supervisor needs to be scheduled. If the Total risk score recommends arranging a meeting with the supervisor the meeting should be arranged as soon as possible.

The higher degree researcher is responsible for contacting the supervisor and asking that a meeting be scheduled at a convenient time for all parties involved. Meetings can vary in length, but as a rule, at least 1 hour should be set aside for the meeting to ensure there is plenty of time for discussion. It is important to make sure the location where the meeting will take place is in a private space, and free of interruptions.

3. Exploring and requesting support

Item 5 “Do I need additional support?” is only completed by the higher degree researcher. In this section

- There is space for the total risk score to be inserted.
- There is also space to provide more information and justify responses to questions with a weighting of 1 or 4 for the six factors.
- The risk assessment scoring criteria is used as a guide to prompt the higher degree researcher to book a meeting to discuss support with their primary advisor.

Item 6 “Accessing support” is completed by the higher degree researcher (only). This section

- Provides an opportunity for the higher degree researcher to let the primary supervisor know support is needed.
- Acts as an information source, highlighting the type of support that is provided by the organization.
- Provides an opportunity for the higher degree researcher to find out more about specific types of support.
- Provides an opportunity for the higher degree researcher to request external support.

4. Facilitating group discussion and staying on track

The GREAT is very useful because it helps to keep supervision meetings between the primary supervisor and higher degree researcher on track. Using the GREAT adds structure to the interaction and forces members of the research team to work through an agenda aimed at assessing the health of the project and student-supervisor relationship in an open, objective, and collaborative manner.

At least 2 days prior to the scheduled meeting, it is essential to provide all participants with an agenda and a

copy of the GREAT self-assessment form. In the communication, attendees should be instructed to bring the completed self-assessment form with them for group discussion. There is no mandatory requirement to physically exchange responses during the meeting. After all, we need to be mindful that there may be some things a higher degree researcher may either not want to or may not be ready to share with others (for whatever reason), and this needs to be respected. However, if all parties agree, there is no reason why completed self-assessment forms cannot be exchanged, especially if it helps facilitate open and honest communication.

Meeting with a higher degree researcher to discuss progress is not just two people having a chat, all meetings need to have an agenda, and this sent to attendees at least two days before the meeting. The agenda outlines the goals to be achieved during the meeting and should be based on the following:

1. How are things going?
 - What is working, what is not working?
 - Suggestions for improvement to create positive change
 - Is additional support required?
2. Moving forward
 - What steps do I need to take to get from A to B?
 - What are the measurable outcomes we want to see along the way?
3. Setting a review date
4. Evaluating progress

All discussions between a supervisor and higher degree researcher during a meeting should be meticulously documented. Either the higher degree researcher or supervisor can be responsible for taking minutes of the meeting. At the end of the meeting the primary supervisor is responsible for distributing copies of the minutes to attendees and completing the GREAT Supervision and Progression Assessment form. A copy of the JCU HSPA – HDR Supervision and Progression Assessment form is available [Word document].

The GREAT Supervision and Progression Assessment needs to be an accurate account of group views and the primary supervisor should ensure that a copy of the completed form is sent to all attendees for comment and any errors discussed and corrected before it is submitted to the Graduate Research Office for filing.

Resolving difficulties and moving forward

The GREAT is based on the conflict resolution model proposed by Davidson and Wood (2004) and has as its foundation the six step “no-lose” approach proposed by Gordon (1970), which encourages everyone to

accept responsibility and promotes problem-solving, positive relationships and effective communication. This means the GREAT can also be used in instances where communication between supervisor and a higher degree researcher has completely broken down.

In instances where the student-supervisor relationship has become unworkable, the GREAT can act as an objective communication tool for promoting constructive discussion through a mediator. The GREAT when used in conjunction with a mediator allows for a structured communication space to be created where everyone can put their case forward and be heard. There is an opportunity to listen to what others have to say, work together to problem-solve and evaluate options to hopefully reach consensus on the best solution, and move forward.

The agenda to be worked through at this meeting should be based on the following:

1. Defining the source of the conflict by focusing on the underlying needs.
2. Generating a range of possible solutions that could potentially meet the needs of all parties.
3. Evaluating and assessing the potential of each solution.
4. Collaboratively deciding on a mutually acceptable solution.
5. Implementing the chosen solution.
6. Evaluating the effectiveness of the solution at a later point in time.

The GREAT Supervision and Progression Assessment needs to be treated as a confidential document that is an accurate account of group views and discussions. All discussions during a meeting should be meticulously documented and the views of attendees respected. An independent person should be recruited to take minutes during the meeting. Alternatively, the appointed mediator can be asked to take notes.

At the end of the meeting, the mediator is responsible for distributing copies of the minutes to attendees, completing the GREAT Supervision and Progression Assessment form, requesting signatures from attendees, amending any errors, and submitting the signed form to the Graduate Research Office for filing. A copy of the JCU HSPA – HDR Supervision and Progression Assessment form is available [Word document].

Putting it into practice

Case study

Hassan is a higher degree researcher in Engineering from Oman and is 35 years old. He has been married for 5 years and his second child was born two months after he arrived in Australia to commence studies. After working as an engineer in Oman he completed his Masters in the US. Then he took time out to work as an academic in Oman. Now with government funding for three years, he is hoping to complete his doctorate to be eligible for tenure and progress along his academic career. He has co-authored two mid-level publications and feels confident about his capacity as a researcher. He selected his supervisors after many conversations. His supervisors include a male external industry partner, a senior female primary advisor and a female secondary advisor who is a 3rd year Early Career Researcher. The team has worked and is working with other higher degree researchers that have a strong presence as a research group. While he is the first Oman higher degree researcher to join the group – it is a very multi-cultural group. They often go for coffee and lunch as a group and meet for fortnightly cohort discussions about readings and methods and the latest research. He has struggled to engage with the group, feeling very stressed almost since arriving because he only has 3 years to complete and because he misses his family greatly. He was desolated when he had to request a 3-month extension when he was not ready for confirmation. He has a lot of feedback to address in order to finalise this milestone. He feels the supervisors are being too demanding, having never struggled with deadlines or received so much feedback on his written work before. The supervisory relationship is strained but all are trying hard to be receptive as they exchange ideas and Hassan works on his research design and literature review.

Instructions

Step 1: Download a copy of the JCU HSSDP – HDR Student Self-directed Project Assessment [Word document] and complete items 1-4 using the information provided in the case study.

- How do you think things are going?
 - List the things that are working well and Hassan seems happy about in the space provided on the form.
 - Is Hassan concerned about or does he want to change anything? Complete your response in the space provided on the form.

- Overall does Hassan seem happy about his progress?
- What are Hassan's expectations regarding his situation?
 - Review the information provided to higher degree researchers pertaining to expectations.
 - Do Hassan's expectations align with university expectations?
 - Is there anything more Hassan could be doing?
 - Look at your responses to items 1 and 2 and suggest three ways of improving Hassan's situation.
 - How would implementing these options benefit Hassan?
 - How would each option enhance Hassan's research experience?
 - How would each option impact the final project?
 - What do you think Hassan's best option is at this stage?

Step 2: Download a copy of the JCU HSPRF – HDR Student Potential Risk Factors Assessment Tool [Word document] and use the information provided in the case study to answer each of the 25 questions. After you have finished, score the questionnaire, and answer the following:

- What score did Hassan achieve?
 - Would Hassan benefit from accessing additional support?
 - If yes, what type of support would improve Hassan's research experience?
 - Would Hassan benefit from meeting with his primary supervisor?


Step 3: Summary and recommendations

- How do you think Hassan is going?
- Is his project at risk?
- Would he benefit from receiving additional support?
- As the primary supervisor, what recommendations would you give to Hassan?
- Any other comments?

Reference Materials

- JCU GREAT [Word document]
- JCU HSSDP – HDR Student Self-directed Project Assessment [Word document]
- JCU HSPRF HDR Student Potential Risk Factors Assessment Tool [Word document]
- JCU HSPA – HDR Supervision and Progression Assessment [Word document]

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While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

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DIVERSE RESEARCH ENVIRONMENTS

6. CREATING SUCCESSFUL HIGHER DEGREE RESEARCHER PATHWAYS IN A DEVELOPING COUNTRY - PAPUA NEW GUINEA

Dora Jimela Kialo; Frieda Siaguru; Imelda Ambelye; Jillian Blacker; Lydia Yalambing; Mirzi Betasolo; Rachel Aisoli-Orake; Sogoing Denano; Susan Gasson; and Veronica Bue

Why read this chapter?

The key learnings from this chapter are:

- the context of supervising higher degree researchers in Papua New Guinea
- the key stakeholders informing success
- a checklist for success.

This chapter is informed by the lived experiences of researchers currently living and working in Papua New Guinea. As you explore this chapter you may find aspects of this discussion that resonate with you regardless of where you are located or the resources that are available to you. However, the fundamentals of supervisory practice are nuanced in this chapter to address the context for supervision of higher degree researchers in Papua New Guinea. Our exploration of this unique research education context contributes to broader discussions of inclusivity, equity and diversity in the higher education sector. Our chapter recognises the vulnerability of PNG and other less developed nations to global events such as the COVID-19 pandemic, climate change, and technological advances. These events have widened disparities between education systems and resources of the global north and south. We propose supervisory practices that enable diverse collaboration and network engagement, highlighting the strengths and opportunities that PNG and other developing countries can contribute to global research endeavours. Our chapter is inspired by Ha's (2018) notion of "pockets of possibility" and proposes more inclusive approaches to internationalisation (de Wit, 2019).



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentsupervisors/?p=103>

Introduction

Supervising higher degree researchers in Papua New Guinea (PNG) is informed by its sociocultural, geographic and economic context. While the country has a wealth of natural resources it ranks 155th out of 189 countries on the United Nations Human Development Index – lower than other Pacific Island nations. It maintains diverse cultures across a population of nearly 10.5 million (including more than 800 spoken languages). The population lives across 3.1 million square kilometres of rugged terrain that hosts 5% of the world’s total biodiversity and the world’s third largest expanse of tropical rainforest. Societal rules and norms continue to deny Papua New Guinean women basic rights, with domestic violence affecting two-thirds of women in the country. Their access to health care and education, and representation in government and public policy debates are also limited. This profile invites further research and engagement from global researchers.

Sustainable development of higher education and research in PNG is constrained by limited funding and resources, and relatively low participation rates in higher education. Ongoing economic and political pressures create uncertainty and instability in many aspects of daily life, from public safety to access to the internet. This context makes it hard for PNG’s education system to begin to address global standards for accreditation and quality assurance and support the creation of opportunities for research networks and collaboration.

Most of the authors of this chapter are members of a Women in Higher Education SIG (significant interest group) and all are female and reside in PNG and Australia. PNG authors have completed or are completing higher degrees by research in Communication and Development Studies, Civil Engineering and Agriculture at universities in Australia, the Philippines, and Papua New Guinea. Many have been supervising higher degree researchers, as well as teaching and leading, for more than 10 years at the Papua New Guinea University of Technology (**PNGUoT**).

Established in 1965, PNGUoT became an institute of technology in 1970 and then a University of Technology in 1973. PNGUoT is now one of eight universities operating in PNG. The university continues to strive to develop guidelines and policies to meet global teaching and research standards with support from valued international partners in the Asia-Pacific region. As part of its commitment to women’s rights, it supports the Women in Higher Education SIG (established in collaboration with James Cook University’s Cairns Institute) and its activities.

This chapter provides an example of an inclusive collaborative research culture. The PNGUoT authors

have, with Susan and Jill from Australia, researched and written this chapter to identify ways to strengthen research capacity and realise the potential of PNGUoT's unique research education environment. It would be easy to propose addressing a lack of researcher expertise, weak infrastructure and limited resources. Instead, we focus on the potential of researchers in PNG and the unique research and fieldwork possibilities offered by the region as value propositions to encourage international collaboration and investment through inclusive supervisory practices. The authors have drawn on their experiences of supervision and in supporting higher degree researchers to identify ways for supervisors to ensure higher degree researchers can progress uniquely framed topics of local interest and potential impact, taking advantage of access to:

- a depth and breadth of global and local methodological and theoretical expertise
- information services and professional development resources
- adequate infrastructure.

Scene setting – The path to success

Figure 6.1 shows the range of stakeholders who can assist supervisors in creating a path to success for their higher degree researcher:

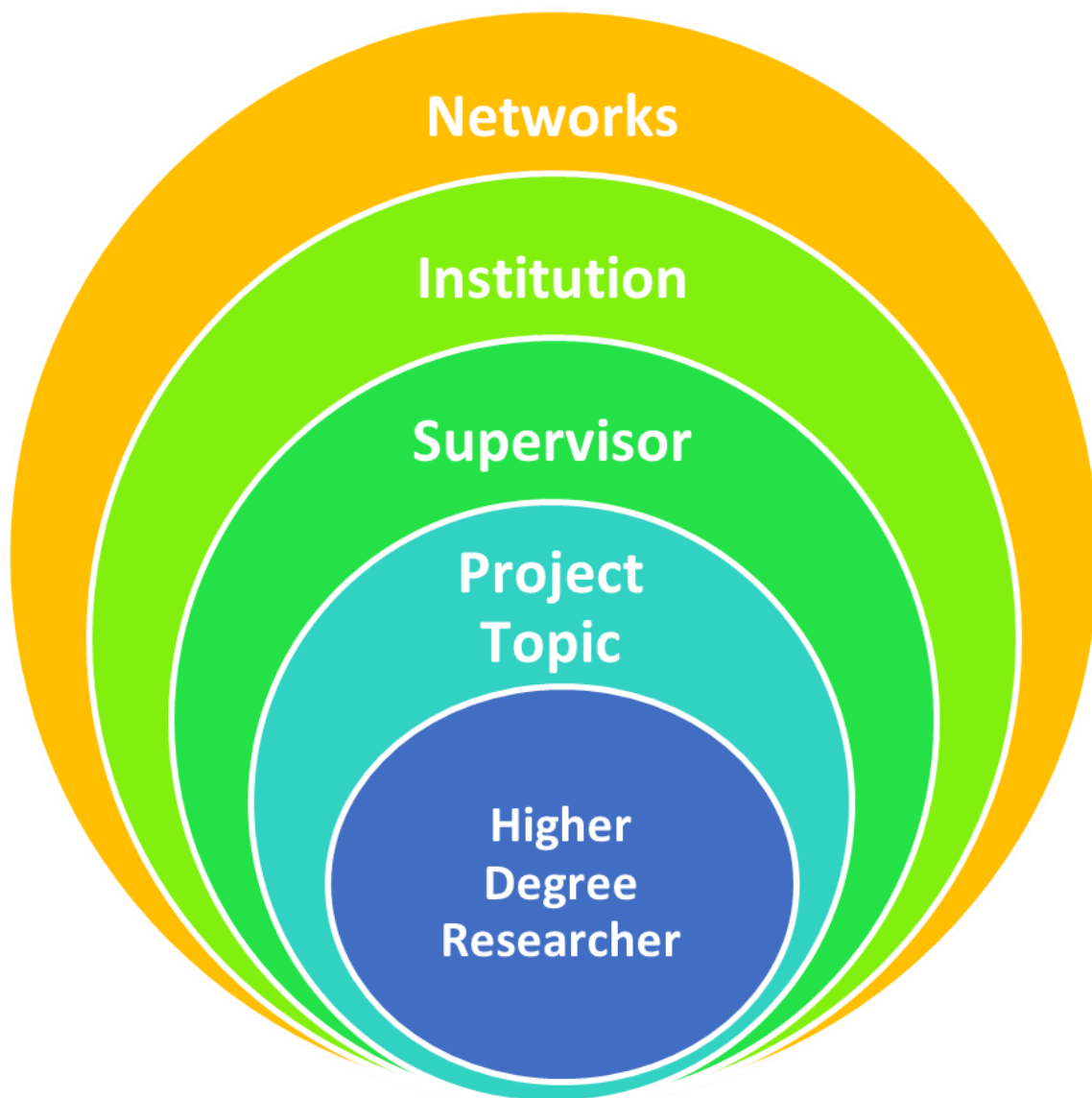


Figure 6.1 Key stakeholders on the HDR path by Rachel Aisoli-Orake, Susan Gasson and Jill Blacker used under a CC BY-NC-SA 4.0 licence

The Higher Degree Researcher is at the centre of the model, without them there is no research education environment. The project topic is defined here as a stakeholder because it strongly influences, and is influenced by, the skills and capacities of other stakeholders, and the resources and contexts where the research is conducted. Ensuring the topic can be supported and is sustainable is a primary key to success in the fragile PNG research education context. The figure emphasises that stakeholders do not operate in isolation. Accounting for interdependencies between stakeholders is a vital practice for supervisors to model to higher degree researchers.

The important factors for success

Topic

Supervisors, in working with their higher degree researcher, will take the lead initially to ensure that the topic selected aligns with the supervisors' areas of expertise. In the unique PNG context there is also a need to account for the availability of suitable literature and selection of suitable research design and data analytics sensitive to the local context. Identification of local fieldwork sites or accessible datasets and tools is also key. The PNG context is a rich site for research, but researchers need to be alert to socio-cultural, geographic, resourcing and economic considerations that may affect topics that can be examined, and data collection practices that will be feasible. These fresh fields ensure the potential for the social impact of research is rich, despite the need to constrain the focus and scope of higher degree research undertaken. Leveraging the strengths and expertise of local supervisors and engaged national and international research networks may enhance the viability of a given topic or proposed research design, and lead to richer more strategically beneficial research partnerships.

Case study – Recruiting quality higher degree researchers

The thesis topic is normally a consideration from pre-admission through to the completion of candidature. For example, the selection of higher degree researchers is undertaken by each department, after initial screening for entry requirements by the PNGUoT Admission committee. The respective postgraduate committee (faculty members) for each department meet to screen the applications. During this time the supervisors get to assess the higher degree researchers' proposed research topics, and their qualification and experiences in conducting research. Through the screening process, the supervisors get to have pre-knowledge of the higher degree researchers they would potentially be supervising. Having pre-knowledge of the higher degree researcher helps the supervisors in providing the necessary supervision and mentoring throughout the postgraduate research journey.

Another aspect to consider is the logistics if 3 or 4 higher degree researchers have indicated their interest to study in a field where there is only one suitable supervisor. Such selection can be dictated by the thesis topic, resulting in many higher degree researchers being assigned to one supervisor. That is why at times the number of higher degree researchers allocated to one supervisor may go over the supervisory limit. This has impacts on both supervisory load, and the quality of the supervision that is able to be provided to each of the higher degree researchers. Supervisory practices in this context are explored further in the next section.

Supervisors and higher degree researchers

Supervisors must take time to get to know the background, experience and interests of their higher degree researcher in order to identify a topic that aligns with available expertise, research resources and networks. Additionally, there is a need to address research integrity and ethical conduct considerations. PNG guidelines and policy are often in development and may be relatively untested in the local context. It is for the supervisors to be the guides, aware of potential delays, or difficulties that could arise due to societal rules and norms or environmental driven constraints. The confidence of higher degree researchers in the topic and their supervisors will be enriched by open discussion of research design considerations that result in the setting of realistic plans and approaches to the research process. The tyranny of distance, when supporting a Higher Degree Researcher located away from campus, is much harsher in PNG. Online interview data collection, sharing of large data sets or written drafts may not be feasible in a context of limited internet and electricity supplies. Visits to multiple sites may not be realistic in certain seasons of the year or in particularly harsh terrain. Finding ways to be available to problem solve and contribute to discussion with your higher degree researcher on the merits of alternative approaches enriches the learning and reduces anxiety and frustration when attempting to make steady progress. In time the higher degree researchers, like their supervisors, will come to navigate around limitations and weaknesses and to access experts and reliable approaches routinely. Finding ways to optimise use of limited internet services, and avoid expensive and unreliable postal services, can be essential strategies for supervisors trying to provide timely feedback.

Case study – Building positive relationships

An anecdote shared by a first-time supervisor, who was the principal supervisor of two Masters students highlights positive relationship building. “Being a first-time supervisor as well as a PhD candidate in the final stages of writing is no easy task. I focus on factors or themes I experience, and have dealt with, in order to successfully help the students I supervised”.

It is important that supervisors have a positive relationship with their higher degree researchers. The supervisors must provide consultative support and feedback and assist in networking with the related communities of practices in scientific research and the context of the study. Consultation tools including Google apps (Google Sheets, Google Docs, Google Slides, Gmail), WhatsApp, Messenger, LinkedIn, and text messaging are useful but can be limited by access to relevant technology and internet stability as well as considerations such as electricity blackouts. So, while there is a willingness to embrace technology to progress both research activities and supervisor/researcher relationships, there are factors that

impact that are beyond the control of both the researchers and their supervisors. For those in remote areas, a letter does help, or a message is sent to the higher degree researcher through someone else.

Different perspectives on time and prioritisation of research in the context of broader social concerns can be hard to monitor in PNG and can impact the effective use of time. In one example, the supervisor created a structured schedule, distributing specific time slots for supervisory meetings, teaching undergraduate courses, research consultations, and personal study. Being aware of the time commitments of higher degree researchers is important. Consider the time they have available to conduct their studies routinely, and their expected timeline for progressing to completion. Consider logistical constraints, and check that timelines reflect the actual durations of key research activities. Discuss how long it takes the researcher to travel to campus, ask them what forms of transport, and timetables are available. Take these and their work and family commitments into account when scheduling meetings (See also Chapter 2).

A key consideration in PNG is that information services within the university may be very limited, so routine access to online journals, or current textbooks may not be possible. Consider institutional and research networks that may provide additional access or can – given time – facilitate the sharing of key documents. Plan with your higher degree researcher to navigate away from places and spaces that may put the conduct of rigorous research at risk.

Here are some examples of risks to three of the key stakeholders:

1. The higher degree researchers – their development must be managed in a context of limited resources, while research standards remain unchanged regardless of context.
2. The project topic – contingency plans for conducting research on the topic are essential. Loss of access to resources, data or expertise can be very disruptive, putting the conduct of the study at risk.
3. The supervisors – their expertise in supporting the higher degree researchers and their research projects are vital, especially in a potentially volatile research context. Supervisors become the core, and sometimes sole, source of guidance and advice. Their roles include: building researcher capacity, sponsoring access to networks and resources, and overseeing the conduct of projects.

Case study – Jane and Adam building expectations

Jane had used Adam as a tutor in a number of her subjects and always found him easy to

work with and able to conduct his classes professionally. As a Senior Lecturer she was also on the university ethics committee and academic board, supervised two higher degree researchers as primary advisor and was working on a grant application. Her grant topic allowed her to ask for funds for research support.

Jane and Adam agreed that Adam would work with Jane on the grant application with a budget for a PhD scholarship for Adam. Jane had also invited a colleague from a developed country to join the work. A librarian by profession as well as a researcher, Ray was able to contribute to the grant writing and provide access to the latest journals based on agreed search strategies. By developing the application together, they ensured that the academic requirements of the grant matched their expertise. Adam also monitored some online modules to refresh his methodological skills and began reading journals to become familiar with the field.

Together they set out the details of the grant to show a timeline for Adam's doctoral studies. Adam talked to his family about his plans to enrol in a PhD if the grant was successful. The scholarship would allow him to devote all his time to his project, but he hoped to continue to do a small amount of teaching to continue developing his practice. His family accepted that if the grant was successful Adam would need time to focus on his studies and they talked about finding a quiet space at home for him to write and think.

Institution

A university's infrastructure should cater for the needs of the higher degree researcher's program of study. This can include but is not limited to, access to technology, access to laboratories and related resources, access to libraries and scholarly articles and databases, funding and scholarships, and workload recognition for supervisors. To explore these elements in practice, consider the following. Within the last decade, there has been a dynamic shift in research practices with the use of Learning Management Systems (LMS) and electronic devices. These electronic and technical devices have had an impact on various stages and aspects of academic research (collecting, measuring and recording data and writing the report on the findings). So higher degree researchers have to be trained to learn, and know how to use, the device and computer programs. Additionally, the capacity of both researcher and supervisors to use these devices to conduct the research successfully, and with ease must be considered.

Further, the institution's support of the availability of laboratory equipment in a technical institution is very important to the success of research outputs. For example, if the water samples brought to the laboratory cannot be appropriately processed and stored, the validity of the test results would be compromised.

Access to resources goes beyond the availability of laboratory equipment. Facilities such as libraries and academic writing and language support are fundamental to the success of a higher degree research candidature. If these cannot be made available at the institutional level, then the higher degree researcher and supervisors must explore research networks and institutional partner organisations to identify alternative ways to access resources. This may involve getting a grant to travel elsewhere to conduct research, or sending samples or data elsewhere, or inviting key experts to visit at key times to engage locally.

Case study – Professional development resources

The establishment of the Academic Resource Centre at PNGUoT could provide professional development and writing resources to maximize higher degree researcher progress. While it is acknowledged that this is a good step, the addition of a dedicated academic writing and learning support centre, with professional tutors specially tailored to assist higher degree researchers, is an ideal that requires funding. Papua New Guineans use English as a second, third or fourth language, so the need for good writing is a big challenge. This challenge remains the supervisors' responsibility when there are no resources or access to an academic writing centre.

Chapter 9 and Chapter 10 explore the roles of libraries and librarians, freely available online programs and resources, and the role of supervisors. These chapters explore how supervisors can facilitate the use of libraries and informed learning resources. Capacity to access, gather and process information is key to the development of independent researchers.

Funding can also impact the success of a research project. Anecdotal experience of supervisors and higher degree researchers is reflected in the following observation: 'The university has a facility to draw funds for my projects, however, there is a funding limit that constrains production of much better research results'. Lack of scholarships and fund sources for high degree researchers can force them to engage in full time work that can distract from their research progress. Work commitments can impact on higher degree researcher's ability to conduct research, realise quality research outcomes, and gain experience as an independent researcher. Higher degree researcher studies require large blocks of time for deeper thinking and engagement with key literature. Scheduling 30-minute blocks between teaching classes is unlikely to be a productive way of progressing studies. Access to quiet workspaces where interruptions are infrequent can be highly beneficial. It can be hard to find such space in a busy work or home environment if facilities are not available on campus.

Finally, institutional support for supervisors to manage workload is essential. Academics face ever-increasing pressures to publish, and to maintain heavy teaching loads and administrative roles. Pressures are also on higher degree researchers to publish before graduation to enhance their employability. Supervisors

can work on publications with higher degree researchers, to reduce the pressures for all concerned and share the workload, and their expertise. Teamwork can reduce the amount of time that needs to be found for research and writing. Equally university leadership has a key role to play in ensuring that workload is distributed fairly, giving everyone opportunities across the domains of teaching, research, and service. These pressures are no different for those in PNG, where teaching and service workload allocations are high, and potentially more so for women academics.

Networks

Networking and collaboration with other researchers is a fundamental aspect of successful supervision. In developing countries like PNG, networks may be used to access essential resources and expertise. Networks can be used to give researchers in other institutions and other countries privileged access to unique local data sets and knowledge that will allow their conduct of research in country. Collaborators can become external supervisors or ‘critical friends’ of the higher degree researcher. They may agree to review or examine projects. They may be able to grant supervisors and higher degree researchers access to additional library resources, research funding, data analytical tools or infrastructure. Network relationships developed and maintained by supervisors can involve mentoring where those more experienced can guide and role model supervisory practices. They may share different ways of critiquing work, or different theoretical and methodological approaches to inform research conduct and design. In return local supervisors can grant access to unique data sets and knowledges, explain the navigation of rich and diverse cultural contexts, and manage expectations of research stakeholders.

Other examples of engagement activities through local and international networks may include enrichment programs. University wide lectures from expert staff throughout the year, specifically targeting topics about the research journey and supervision may be offered. Topics might include introduction to the research culture, preparation for candidacy, reviewing literature, research methodology, data collection, analysis, thesis write-up/ writing for publication or thesis examination. Some departments may be able to frame events as course content for their higher degree researchers. If research methodology subjects are not offered within courses, then supervisory mentorship may be required. For departments that do offer research methodology subjects, there may be online resources available, or visiting experts providing complementary resources to the support provided to higher degree researchers. Sourcing support beyond the supervisory team needs to be considered and planned for well ahead of time.

Higher Degree Researcher networks or significant interest groups, initiated by supervisors or the researchers, allow researchers to share, learn and support one another through candidature. Networks may include researchers from across a range of related fields, connected by their higher degree by research enrolment. Such groups can allow more advanced higher degree researchers to provide advice on the navigation of candidature to new researchers, and help them in the identification of additional expertise and infrastructure that may inform their progress.

Some other examples of key additional stakeholders include mentors, sponsors, or collaborators who may

be found in other areas of the university, beyond the university in industry or government, or perhaps in universities in other countries around the world. The authors of this chapter who are members of PNGUoT Women in Higher Education (WIHE) SIG acknowledge the value and power of their peer-to-peer community of practice.

Case study: Jane and Adam build research networks

The grant was successful and a year later Adam is enrolled in his PhD, on a scholarship, progressing his research. A big hurdle for Adam is that he must present on his project to a panel and provide his literature review and project plan for their comments. The outcome of this presentation will be confirmation of his candidature and scholarship for the next 2 and a half years.

Jane is keen to use this milestone to further develop Adam's academic writing and presentation skills. As a writer Adam is still struggling to adopt the thesis genre that involves using the literature to support his argument and intended research contribution. His critical thinking skills are growing, but he is finding constant reviews and revisions of his work troubling, unclear why his current drafts are not good enough. Similarly, he is approaching the presentation as a tutorial and not confident about responding to questions from the audience and panel at the conclusion of the presentation.

To address these issues Jane is prompted to create a peer mentoring group. She creates a monthly meeting and invites Adam and her other two students to attend. Two other supervisors and their two higher degree researchers also come along to the meetings.

At each meeting higher degree researchers present, lead discussions, or nominate to present or lead future sessions. There is also time devoted to a round table sharing of researchers' project progress. Presentations include practice presentations for conference papers and confirmations. Leaders present papers they find interesting and facilitate discussion of their contents. Supervisors are present to support discussion and model good practice in reviewing work and giving constructive feedback.

For Adam and others, meetings provide a valuable way of learning from the experience of others, discovering the standard of work expected at different stages of candidature, and developing critical thinking and reviewing skills.

Checklist for success

The following checklists are provided for supervisors to discuss with their higher degree researcher, accounting for key stakeholder considerations.

Higher Degree Researcher – For the higher degree researcher to complete and discuss with the supervisors:

	Considered? (Yes or No)
Consider your work and research experience to date, and how it has prepared you for research studies? Honestly consider your strengths and how to ensure a good fit for your background, expertise and interests with a possible project and supervisor. What are the admission requirements and are you able to meet them?	
Are your family and friends supportive of your studies, and aware of how it will impact your time and devotion to their needs? Have you discussed your commitments with your supervisor and discussed a study timeline? Have you engaged any scholarly networks or contacts you have who may be able to provide advice on managing your time?	
What arrangements can you put in place to travel regularly to campus to meet your supervisor? Do you have access to study related resources? Have you discussed your needs with your supervisory team? Is there a place where you can go to focus on your studies for at least 20 hours a week if you are studying part time and double that if you are studying full time?	
Are you aware of the support you can get from your supervisors? Have you considered with them how you will work together, and accounted for any concerns about professional development or infrastructure needs? Have you explored networks beyond the supervisory team and institution that may be important to you and your studies?	
Are their financial considerations to be addressed before you can study? Have you explored available funding and scholarships with your supervisors? Have you considered study exchanges or double degrees with overseas universities?	
Will you be studying full or part time? Externally or internally? Have you considered and addressed the implications of your study mode for meetings with supervisors, accessing resources, family and work commitments?	
How will you manage work life balance during the term of candidature, that could be up to a decade for part time students. Carefully consider your goals and motivations. Have you discussed with your supervisors your goals?	

Topic – For the supervisory team to complete and discuss with the higher degree researcher:

	Considered? (Yes or No)
Is the proposed project topic well aligned with the available infrastructure and expertise? If not, who can assist you to address needs locally or globally?	
Does the higher degree researcher's academic and research record reflect the capacity required to conduct the research? If not, what are the options in terms of variation to topic or additional pathway courses to better prepare the researcher?	
Do the supervisor's theoretical and methodological approaches align well in supporting the student and their project? If not consider where additional support may come from, or how accounting for existing areas of strength may help better align the topic with supervisory capacity.	
What are the possible outcomes of the research (e.g., journals, books, patents, or reports to government) and what role can the supervisors play in supporting their achievement? What expertise and expectations does the Higher Degree Researcher bring and are those accounted for in the outcomes planned? What other experts may be useful stakeholders to invite onto the supervision panel or contact for support?	
What are the research integrity considerations to be agreed on and understood (e.g., authorship, intellectual property, ethics, and data management) and does the supervisor's range of expertise and experience mean they can support this work? What policy, guidelines, online resource, or external expert can you call on to guide you in ensuring the research is conducted appropriately?	
Will supervisors' research be used to inform or be informed by working with the higher degree researcher on a topic led and owned by the higher degree researcher? Are appropriate arrangements in place to ensure all authors will be credited on work generated? Is there a need to explore how to set such arrangements in place, and if so, what appropriate resources can be accessed?	

Supervisor – Supervisors along with their higher degree researchers to discuss supervisory approaches available to them (See also Chapter 1):

	Considered? (Yes or No)
Can supervisors establish an enduring relationship with the higher degree researcher in this context? If working across communities or countries – have you set up time to share and discuss contextual considerations?	
Can supervisors negotiate meeting arrangements and ways of providing feedback that are suitable for all concerned? Can realistic expectations be set with higher degree researchers about timelines based on access to internet and postal services, and time required to prepare for meetings? Negotiate and explore options if timeframes are not reasonable.	
Can supervisors champion the higher degree researcher's research by introducing them to a range of networks, providing one to one support and guidance, and being a research role model?	

Institution – For supervisors and their higher degree researcher to discuss the resources available to them:

	Considered? (Yes or No)
Can supervisors confirm that required infrastructure can be made available to the higher degree researcher? Have concerns or constraints been discussed? Are Plan Bs in place to account for any concerns?	
Can supervisors ensure the higher degree researcher is aware of and can make good use of resources available? Have concerns or constraints been discussed? Are Plan Bs in place to account for any concerns?	
Who are the key stakeholders within the university the supervisors should liaise with or introduce the higher degree researcher to in order to provide sufficient administrative support and guidance? Who within the broader community may be able to assist including alumni, university networks and researcher development organisations?	

Networks – What additional resources are available? Have the following factors been considered?

	Considered? (Yes or No)
What library resources, professional development offerings and infrastructure will be accessed beyond the institution and how?	
What supervisor and higher degree researcher networks beyond the university can be used to inform the higher degree researcher's progress?	
Can higher degree researchers networks at the institution, or with higher degree researchers and alumni beyond the institution provide added support for the higher degree researcher?	
What internal and external scholarships, grants or resource providers can supervisors and the higher degree researcher identify to enhance access to resources?	
What sources of emotional and practical support are available? How can supervisors and the higher degree researcher access these more readily?	

Evidence your practice

Can you identify a topic that is well aligned with your research interests and expertise? Can you identify a potential applicant to discuss this topic with? Are their interests, skills, and experience well aligned to the topic?

What are your current practices as a supervisor in building student skills? Based on your review of this chapter, are there other new practices that would be more effective? Articulate these.

Consider your research networks. How can you apply these to develop a sustainable research education environment for you and your higher degree researcher?

Conclusion


PNG supervisors and higher degree researchers face many challenges and have access to many opportunities as they navigate a doctoral candidature together. As noted by Papoutsaki & Rooney (2006) they include:

- building a research culture through continuity of staffing
- designing curriculum in response to the needs of PNGs diverse communities
- creating new knowledge building on locally based fieldwork
- using senior academics to mentor new researchers in required research skills

- nurturing academic networks across the Asia Pacific region.

The learnings and lived experience shared by authors in this chapter provide unique, informing insights aimed at enhancing collaboration and supervisory practices. Institution support and appropriate guidelines are important in administering graduate research school programs. Where the institution is less research intensive it may be an opportunity for the active research community to contribute to development of resources, perhaps drawing on the expertise of their scholarly networks and trusted online resources. The priority is to ensure that PNG and its wealth of promising researchers and research contexts are brought into the frame of global research activity. PNG has much to offer in terms of unique resources and varied social cultural perspectives. Being aware of their own research strengths, access to resources and expectations and plans will help supervisors to make best use of higher degree researchers' strengths and capacity. Continuing to build relationships with networks globally is a vital strategy employed by even the highest-ranking universities. Building on strengths, being innovative and creative in approaching challenges and being inclusive in research practice will always serve the PNG researcher and those in the global research community well.

Additional Resources

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

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7. SUPERVISION OF INDIGENOUS RESEARCH AND HIGHER DEGREE RESEARCHERS

Ailie McDowall; Felecia Watkin-Lui; Martin Nakata; and Sana Nakata

Why read this chapter?

We find ourselves in a moment of opportunity for Indigenous researchers to help build the knowledge and research capacity to positively impact Indigenous communities and the academy. There is an increasing demand for Indigenous researchers to participate in research projects and on grants. At the same time, potential Indigenous higher degree researchers are approaching supervisors wanting to research a wide range of topics, but like all students arrive with varying capabilities to undertake thesis work. These higher degree researchers also encounter an academic workforce that is still developing its own supervision capabilities to meet this growth in demand.

This chapter will:

- demonstrate how JCU's Indigenous Education and Research Centre has been conceptualising the support of Indigenous higher degree researchers
- describe issues in higher degree researcher and supervisor capabilities in the context of Indigenous research topics, and
- suggest how supervisors might address these capabilities in their practice.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentsupervisors/?p=98>

Defining a research problem in Indigenous

research

Supervisors' experience with Indigenous research projects

In an environment with increasing demand for Indigenous research and an impetus to support increasing numbers of Indigenous higher degree researchers, it is as important for supervisors to first understand how their research training and practice shapes their contribution to a project.

As supervisors, transparency with higher degree researchers and with other supervision panellists is important. Talk with them about your intellectual commitments, including theoretical and methodological practice. Explore together the extent to which these commitments usefully support or pull against Indigenous research activity in your field.

Supervisors are encouraged to lean into their own expertise and share that expertise through research training and education. Not all Indigenous research projects require Indigenous research methods, and equipping Indigenous researchers with traditional methodological skills can have value. Supervisors also need to be self-reflexive about how their own training and commitments may come into tension with Indigenous knowledges and research practices.

Due to the limited Indigenous research training capacity nationally, supervisors should not assume that others can supplement gaps in your expertise. The Indigenous academic workforce is growing, but still small and it is not appropriate that non-Indigenous supervisors continue to delegate this aspect of their supervision to others. We encourage supervisors to take a professional development approach to your own skill set and invest in your ongoing learning: reading new literatures alongside higher degree researchers, facilitating peer learning groups and critical friends, attending conferences, and asking questions.

Research problems at the interface between knowledge systems

Not all research problems emerge from identifying gaps in existing scholarship. But all research problems will add something new to existing scholarship.

In Indigenous research, many research problems will emerge from empirical problems that the higher degree researcher has observed or experienced in their everyday life. The literature review task is thus driven by the purpose of identifying whether the observations or experiences have been studied and made sense of in the academy already. Gaps may well be identified. Sometimes, however, it can appear that there is literature 'on the problem' and an Indigenous higher degree researcher may need direction to articulate how their inquiry will present something novel. Supervisors can support higher degree researchers by working with them to identify their novel approach by thinking 'widely' about the literature rather than

‘narrowly’, which risks guiding higher degree researchers into disciplinary debates and potentially away from issues of significance to them.

Encouraging higher degree researchers to investigate widely may identify what types of commitments underpin that body of knowledge: ontological, epistemological, conceptual or methodological. From here, higher degree researchers should be able to identify how their proposed study is different from existing knowledge on the subject. Indigenous research projects will often reveal how Indigenous and Western knowledge systems are grounded in distinct commitments, and with many Indigenous research projects, higher degree researchers will need to be supported to grapple with the interface between them.

Understanding the complexity of contemporary Indigenous situations

Supervisors will arrive on panels understanding the complexity of contemporary Indigenous situations in different ways – through lived experience, through research, and through relationships. Each type of experience has its limits.

Similarly, Indigenous higher degree researchers may have understandings that they cannot yet articulate through academic or disciplinary language. Supervisors may also not have the language to understand what the higher degree researcher is trying to articulate.

Some try to address this issue by ensuring that each panel has an Indigenous supervisor, or that the higher degree researcher engages an Indigenous reference group. These strategies can be useful if those providing advice have experience with the research problem under investigation. There are also other ways to ensure that the project aligns with Indigenous priorities (such as through the higher degree researcher’s networks or through partnerships with Indigenous organisations), and for supervisors to develop their understandings. Groups such as JCU’s Indigenous Research Support Network also provide venues to discuss issues.

Doing a literature review in Indigenous research

Reading volumes of material

The thesis literature review provides an opportunity to study and map previous attempts to tackle the research problem, deepening familiarity with both academic writing and conceptual knowledge. It also provides higher degree researchers and supervisors an opportunity to ask questions of previous approaches: did they work? What assumptions underpinned these approaches? Did they contribute tangible outcomes to Indigenous goals?

Reviewing the literature requires higher degree researchers to search for, locate, identify and read a mass of relevant literature, eventually sorting this literature into more and less relevant materials. Many Indigenous students are underprepared for tertiary education when they commence undergraduate studies, requiring considerable academic skill development during their initial degrees (Nakata & Nakata, 2023). Depending on the individual's academic pathway, commencing Indigenous higher degree researchers will have varying levels of independence when it comes to critical reading.

We suggest that supervisors do not make assumptions about Indigenous higher degree researchers' capacities to identify and read masses of literature. Rather than sending higher degree researchers off to independently read, make time to discuss approaches to locating and identifying relevant literature, and model how you work your way through volumes of material. A useful approach is to plan a longer supervision session to sit together and find and discuss relevant literature. Regular check-ins during this stage allow you to clarify minor misunderstandings and provide feedback.

Understanding argumentation in scholarly literature

Having located relevant literature, higher degree researchers need to be able to read the structure of the argument. This is again important in both understanding the field and learning to produce their own writing. Proposition structure will support higher degree researchers in writing their own theses.

We have noticed that as Indigenous research interests proliferate across a range of disciplines, in many fields there is an over-reliance on papers that critique or present a position on a topic, with varying levels of evidence to support arguments. If higher degree researchers learn to read for propositions, structure and evidence, they will be better able to understand the limits of previous research attempts, as well as possibilities that exist within their field. Such an approach also centres the higher degree researchers' own critical analysis skills and works toward building a scholarly identity.

This issue is again connected to Indigenous higher degree researchers' previous academic training. Universities often provide workshops on identifying main arguments and Indigenous higher degree researchers can be encouraged to attend these. Such workshops may be insufficient for postgraduate research. In this case, supervisors or discipline-based postgraduate coordinators can work with individuals or groups of higher degree researchers to demonstrate how you would identify the main argument in a paper, providing opportunities for candidates to trial approaches and receive feedback. Higher degree researchers will also benefit from guidance on developing an argument as they produce their own literature reviews and analytical chapters.

Note-taking and writing short descriptions from materials

Annotating materials is a fundamental skill in moving from reading literature to producing a critical review. Learning to write short and concise notes is important to being able to identify major arguments.

Note-taking is taught in the school system, albeit with various emphases. University disciplines provide students different opportunities to practise and cement these skills, depending on the engagements with scholarly content. Here too, we would suggest supervisors do not make assumptions about their Indigenous higher degree researchers' experience in note-taking. You can work with higher degree researchers to practise identifying the paper's core proposition and writing short descriptions of the arguments, including an assessment of the evidence to support the argument. These descriptions provide building blocks for a more critical, rather than descriptive, literature review.

Encouraged to write short annotations of literature, a higher degree researcher wrote half-page descriptions of each article they read. The first draft of the literature review was overly descriptive, containing information that detracted from an understanding of how the field was constructed. By re-writing shorter descriptions, the student could focus more on the major arguments.

Indigenous research design

Difference between theory, methods and methodology

As many Indigenous higher degree researchers take on novel topics within their fields or work from philosophical assumptions unfamiliar to their supervisors, it is important that higher degree researchers learn to differentiate between theory, method, and methodology.

Indigenous research projects undertaken within the University necessarily involve an interface between Indigenous and Western knowledge systems. While supervisors are increasingly recognising the place for Indigenous research methods within projects, a focus on research methods without a focus on theory is likely to produce fundamental tensions in later stages of analysis. Ensuring higher degree researchers can identify and critically engage with the underlying theoretical assumptions in their research design (including problem formation) and the methods they consider utilising will help minimise later challenges. It is also a reminder to supervisors that engaging in Indigenous-generated theory and philosophy should be taken as seriously as consideration of Indigenous research methods. Importantly, strong Indigenous theorisation of knowledge production can align well with 'traditional' Western research methods.

Qualitative research

Many supervisors encourage Indigenous higher degree researchers to use qualitative approaches. The depth and richness of qualitative data, as well as the opportunity for Indigenous participants to represent their own experiences, are attractive to higher degree researchers and supervisors alike.

We suggest that supervisors contemplate the complexities of generating new data in qualitative research projects. These include:

- An extended ethics process given that Indigenous participants/topics often automatically make the project ‘high-risk’
- Negotiating site access and following community protocols
- Recruiting sufficient participants from what is often a small potential pool of potential people
- Training higher degree researchers to interview Indigenous participants who may be uncomfortable expressing themselves in a formal research setting
- Analysing research data, particularly if Indigenous participants’ points of reference differ from those commonly used in your discipline.

You will need to work closely with the higher degree researcher to determine whether qualitative research is appropriate for them. Considerations include whether the higher degree researcher is joining an existing project, whether they have access to sites and participants, and their previous experience representing Indigenous experiences within academic and disciplinary conventions.

Alternatively, analysing pre-existing data (such as policies, previous transcripts, archival research, or publicly available data like newspaper media) can facilitate opportunities for scholarship whilst minimising the risks to the project.

Project managing Indigenous research

Working to the timing of milestones

Regulating candidatures through milestones can lead to higher degree researchers focusing on achieving goals related to milestones rather than maintaining a clear focus on the research and subsequent research thesis.

We suggest that all candidatures commence with the end goal (the thesis) in sight, and that the progression of chapters is prioritised. Many Indigenous higher degree researchers have additional community and family responsibilities they must manage (Barney, 2013). Early and frequent conversations about self-regulation strategies in the context of research work can provide conditions for success. You can support the higher degree researcher to break the project into chunks, with clear goals and an agreed schedule of

deliverables. Re-visiting this schedule regularly and ensuring there are opportunities to revise as necessary should ensure that higher degree researchers are on track for milestones, without making the milestones the goal.

Indigenous higher degree researchers also experience unique time pressures that supervisors should take into account. There is high demand upon Indigenous researchers from the earliest stages of their career to become members of larger projects. Sometimes, they are sought after by research groups seeking to demonstrate their inclusion of Indigenous researchers, represented as good opportunities for mentoring and networking. This can certainly be the case. However, supervisors need to play a strong role in supporting higher degree researchers to make choices that do not inhibit the student's own goals and timelines. In our experience, often the benefit accrues to more established researchers than Indigenous higher degree researchers.

Fieldwork

Many Indigenous higher degree researchers are highly respected members of their communities. Their relationships within a community can both facilitate fieldwork and raise complexities which can be difficult to negotiate within a research degree's timeframe.

Supervisors should prompt higher degree researchers to reflect on their own position within the research and its impact on fieldwork. Where the higher degree researcher has pre-existing relationships, you will need to discuss how to re-frame personal, family, community and professional relationships into a research context, and assist them to develop self-awareness about how they present themselves to potential participants. Strategies such as wearing university uniforms and communicating through university channels can help to emphasise the higher degree researcher's position as researcher.

Supervisors should also be hands-on in developing interview questions and practising interviewing. Closeness with the topic and participants can lead to inexperienced researchers making assumptions about participants' positions, rather than asking follow-up questions. These issues can be supported through training. Ensure potential participants and interview questions are closely aligned to the research question, rather than following tangential interests (from the student or supervisor), given the complexities of Indigenous research contexts.

When researching in community settings, we recommend supervisors being hands-on in analysis. Study transcripts independently from the higher degree researcher, probing why they think participants gave a particular response. The higher degree researcher should then allow for time to workshop the analysis with community participants. You will need to discuss what will happen if participants are unhappy with the analysis, or want their views represented differently. This is not to suggest that participants' analysis should dominate the final thesis. Rather, participants should have an opportunity to express their own understandings, and higher degree researchers should check that these understandings have not been lost in the disciplinary analysis. It also builds the understanding that Indigenous community people need to see

themselves represented within research to enable impact. This stage can help develop relationships that can be useful for postdoctoral research.

Ethics

Relationships in the research site also affect questions of ethics. If supervisors are unfamiliar with Indigenous research protocols, guidelines from organisations such as AIATSIS and the NHMRC are useful starting points. Where Indigenous higher degree researchers are well known within the community, it is important to negotiate any perceived requirement to participate. You will need to support higher degree researchers to conduct interviews where participants can speak voluntarily, freely and confidentially. They may also need to manage participants' expectations that the research will result in immediate change.

Withdrawal of data

While rare, there is a possibility that participants may withdraw data from a research project. Ethically, this would likely result in that data no longer being part of the project. This could have implications for the project's viability and serious implications for an Indigenous higher degree researcher having insufficient data to analyse. The supervisor's responsibility is to be considerate of these potential tensions and balance the respect for Indigenous protocols and their educative duty to the higher degree researcher. The possibility of data withdrawal should be considered in the research design process, ensuring that the project is robust enough to withstand such a request.

Writing, examination, and publication approaches for Indigenous research

Interpreting Indigenous research data

We recognise many supervisors have limited experience interpreting Indigenous research data. Indigenous participants and Indigenous higher degree researchers may draw on reference points unfamiliar to you as supervisors. This is another delicate balance that supervisors must hold: the reflexivity to recognise the limits to your own approach, and supporting the higher degree researcher to analyse this data with theoretical and conceptual frameworks.

You can encourage the higher degree researcher to explain how Indigenous reference points may provide a new way of thinking about the topic. Rather than deferring to an Indigenous position as the 'truth', this requires an engagement with and extension of the disciplinary conventions in your field. Theories such as the cultural interface and Indigenous standpoint theory (see Nakata, 2007b) can be useful tools to assist higher degree researchers in interpreting contemporary Indigenous situations.

Selecting and responding to examiners of Indigenous research projects

Indigenous research remains a small field, with a small pool of potential examiners. The pool of Indigenous examiners is smaller still, and both personal and professional conflicts of interest exist.

A thesis does not need to be examined by an Indigenous examiner, rather by an expert in the field. There will be a strong correlation between Indigenous research expertise and Indigenous examiners, but where an Indigenous expert in the field is unavailable, the next best choice is another disciplinary expert, rather than an Indigenous examiner with less expertise in the thesis subject matter. Again, this approach centres the supervisor's responsibility to the candidate.

You will need to guide the higher degree researcher in responding to examiners, particularly where reports are critical of the work. Some examiners hold strong convictions about what constitutes appropriate methodological and theoretical approaches for Indigenous projects, which may or may not reflect genuine issues in the thesis. Where critique corresponds to the argument presented in the thesis, it should be addressed. Where critique is founded in alternative theoretical or ideological perspectives, the higher degree researcher can identify this in their response to examiners.

Supporting publications

Supervisors play a key role in encouraging and supporting Indigenous higher degree researchers to establish their track records, particularly as lead and sole authors. This can include developing a publication plan and demonstrating how manuscripts can be developed from thesis work (or vice-versa).

As a supervisor, you mentor an Indigenous higher degree researcher into new academic networks. They are invited onto an existing research team's proposed publication, whose lead researcher you have known for many years, and who is keen for the novice researcher to contribute an analysis of Indigenous knowledges relevant to the central thesis. This is an exciting opportunity for establishing a publishing record for the higher degree researcher. As the paper takes shape, the higher degree researcher makes their contribution but then raises concerns that the analysis is not consistent with their contribution around Indigenous knowledges. The higher degree researcher suggests a different approach, but the research team rejects this idea and indicates they are overstepping their agreed contribution. The higher degree researcher is distressed: they can either keep their name on the paper, despite their reservations about its overall argument; or they can withdraw, eliminating an


opportunity for their first publication and risking new professional relationships. They share with you what has happened, but do not explicitly ask you for advice.

In this situation, a supervisor needs to prioritise and protect the interests of the higher degree researcher, their intellectual integrity, together with the goals of timely completion and establishing a research track record. A number of options follow: you can offer your support to the higher degree researcher no matter what decision they make. Whether they progress the publication or not, you can help identify an alternative publication opportunity from their own emerging research that they might lead or sole author. You can de-emphasise the need to publish under these circumstances, and assure them of future opportunities. You can smooth tense relationships with your colleagues, or you might be willing to advocate for them more strongly given your long-standing relationship with the project lead.

Conclusion


Supervisors have a vital role to play in educating the next generation of Indigenous researchers. As you develop your own experience, awareness of the complexities of Indigenous research, and to protect the interests of the Indigenous higher degree researcher by ensuring a high-quality research experience.


References

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.


Supporting Indigenous HDRs

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8. SUPERVISING INTERNATIONAL HIGHER DEGREE RESEARCHERS FROM NON-ENGLISH SPEAKING COUNTRIES

Santosh Jatrana and Susan Gasson

Why read this chapter?

The chapter explores the challenges faced by international higher degree researchers from non-English speaking countries. We provide a tool outlining how to support higher degree researchers from non-English speaking countries to progress to completion.

This chapter will provide:

- An overview of international higher degree researcher enrolment trends in Australia.
- Supervisor responses to common challenges faced by higher degree researchers from non-English speaking countries.
- A six-phase tool highlighting supervisory approaches that support the progress of higher degree researchers.



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Overview of trends

The number and diversity of international higher degree researchers has steadily increased in Australia in the past two decades, with education being Australia's third biggest export category. International education contributed more than \$40 billion to the Australian economy in 2019 (Australian Bureau of

Statistics, 2022). In 2023, there are more international students from non-English speaking countries (e.g., China and India) than at any time in the past (Department of Education, 2022).

Our chapter builds on our expertise in supporting higher degree researchers. Santosh has a 100% completion rate for her international higher degree researchers. Susan's input, as a researcher developer, has motivated Santosh to share her reflections on how to select and support higher degree researchers to completion. Together we have built a framework to help supervisors navigate challenges (e.g., cultural clashes, social isolation due to homesickness, stress in adjusting to new social norms, unfamiliarity with the education system) faced by international higher degree researchers. We describe approaches supervisors can take to enable success; the services and supports that are critical; and key decision points and how to navigate them. The tool helps supervisors build trusting and respectful relationships with their higher degree researchers, by addressing their research and career expectations through provision of tailored research education opportunities.

The international higher degree researchers considered in this chapter are higher degree researchers from non-English speaking countries who enrol in English-speaking countries. Santosh chose this focus because of her experience of challenges faced by higher degree researchers from a non-English speaking country attending studies in an English-speaking country. Santosh draws on her personal experiences as a higher degree researcher from India studying in Australia, and as an Australian university supervisor supporting higher degree researchers from non-English speaking countries. Susan has worked, as a research manager and developer in Australia, for more than 30 years with international higher degree researchers and their supervisors.

Supervisor responses to challenges faced

International higher degree researchers face language, cultural, and educational challenges. The induction of higher degree researchers by supervisors contributes to their successful transition to research education in a new environment. Supervisors ensure higher degree researchers share their expectations and that they respond to these in kind. If higher degree researchers' expectations about their role and that of their supervisors are not addressed, this can result in confusion and stress. In some countries the supervisor directs the research, while in others higher degree researchers are encouraged to take ownership of their own research. Supervisors need to clarify their expectations early and support higher degree researchers in adjusting to their new research context. Clarifying expectations, such as with Paltridge and Starfield's Role Perception Scale (2020), can be a good way to establish trust and respect. Trust and respect help to build a supervisor/higher degree researcher relationship that will endure the demanding years of a higher degree by research award. Further advice on responding to challenges will be provided in the next section.

Supervisors, as part of a broader institutional network, provide intellectual guidance, technical and laboratory support, administrative or managerial advice, and personal empathy. Their sensitivity to family and social concerns contributes to the mental health of higher degree researchers as they face the demands

of higher degree research. With heavy teaching and service workloads, it is important that supervisors encourage higher degree researchers to access institutionally provided services (e.g., English language classes, daycare centres). Accessing these services ensures that higher degree researchers receive expert, sufficient, and timely attention.

Figure 8.1 provides a snapshot of the networks available to higher degree researchers (see also Chapter 3 and Chapter 4). The supervisor's role is to be aware of these networks and to provide safe spaces where higher degree researchers can share concerns. Guiding and encouraging higher degree researchers to engage with various networks enriches their research experience. Broader networks ensure they have the support required to meet the challenges of research studies.

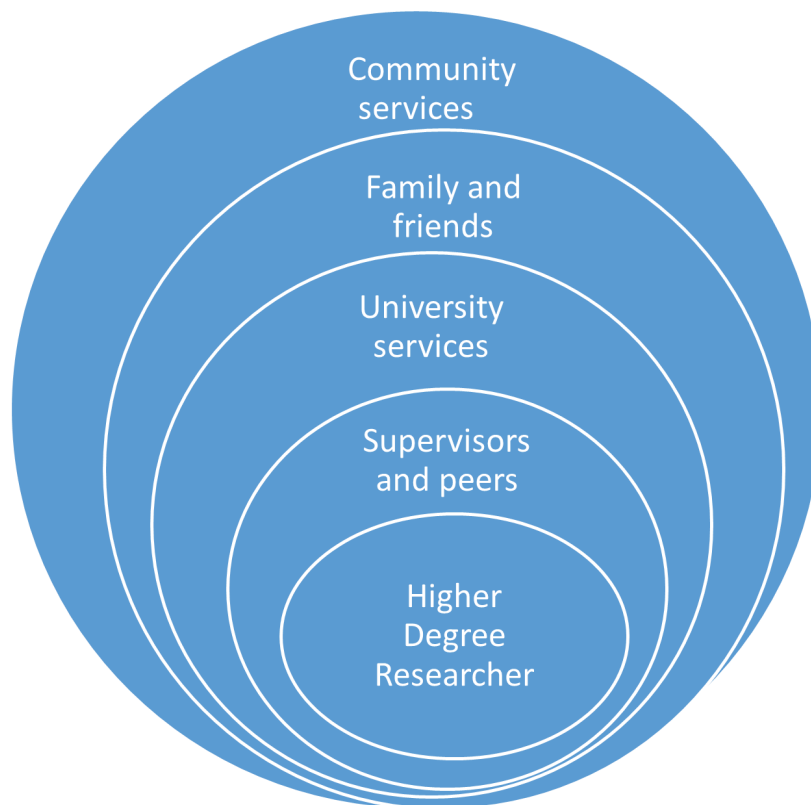


Figure 8.1 Higher Degree Researcher networks by Santosh Jatana and Susan Gasson, used under a CC BY-NC-SA 4.0 licence

Below are some key activities offered to international higher degree researchers by key networks. Supervisors can ensure international higher degree researchers access:

1. **Orientation:** attend available orientation programs to help them become comfortable in their new environment. (See also Phase 1 of the higher degree researcher Supervisor framework).
2. **Resources:** know how to access required resources, such as research materials, laboratory equipment, computer hardware and software, office equipment, etc.
3. **Time and money:** are aware of the maximum time for their award and the budgetary and compliance considerations associated with completing the award. Higher degree researchers due to visa conditions may be constrained in their ability to fund their studies. Their ability to study may be

conditional upon scholarship funding. The potential to finalise studies at home may be impossible because of infrastructure constraints. Family and community investments in higher degree researchers may be contingent on their success and timely return home. Supervisors need to be sensitive to these pressures that can make higher degree researchers more vulnerable to negative feedback, and less able to overcome setbacks in progressing their research.

4. **Cultural differences:** feel that their cultural values have been considered and respected. Supervisors have a role in ensuring higher degree researchers understand the cultural values of their new environment and work to create an inclusive environment where cultural diversity is respected and celebrated. Through open discussions of any potential culture clashes critical advice and guidance can be offered and accepted. Supervisors, disciplines, and institutions can manage potential culture clashes by providing suitable orientation and support programs for higher degree researchers. These programs should include information about the local culture, education system, and language, as well as resources for adjusting to the new environment.
5. **Feedback and meetings:** receive regular updates on progress to meeting requirements such as progress milestones. Regular meetings will be greatly valued and valuable.

Higher degree research supervision tool

The six phases of HDR supervision illustrated in Figure 8.2 summarises the support involved in supporting international higher degree researchers. Supervisory practices are shared that relate to each phase. The approach is designed to ensure a holistic approach. The phases accommodate the fact that each combination of higher degree researcher, supervisor, and project is unique, and that needs evolve during higher degree research studies.

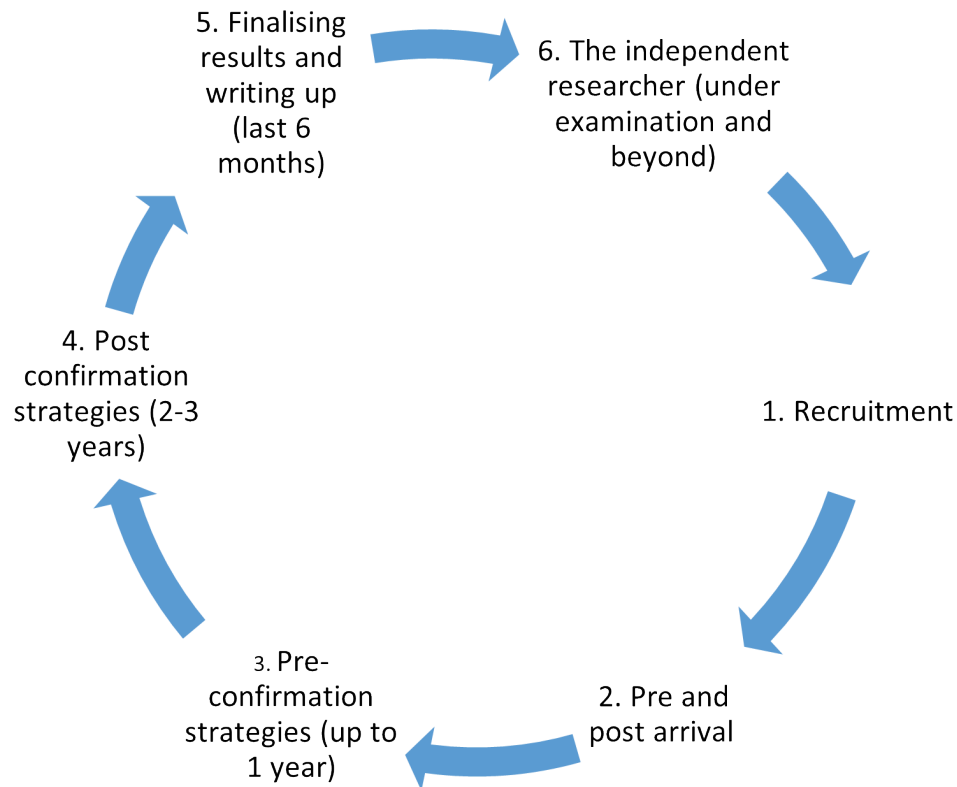


Figure 8.2 Six phases of Higher Degree Research supervision by Santosh Jatana and Susan Gasson, used under a CC BY-NC-SA 4.0 licence

Phase 1 – Recruitment

Santosh receives many emails from international students interested in studying a PhD in Australia, but, the ones she follows up have looked at her profile and can demonstrate interest in her research work. They can show that their research training and experience align with her areas of interest and expertise. She always looks up their graduating universities to assess their research capacity, and considers if the writing in the emails reflects a sufficient command of English. It is also reassuring if their referees are known to her or are part of her research network.

Three aspects of the higher degree researcher recruitment process are illustrated in Figure 8.3.

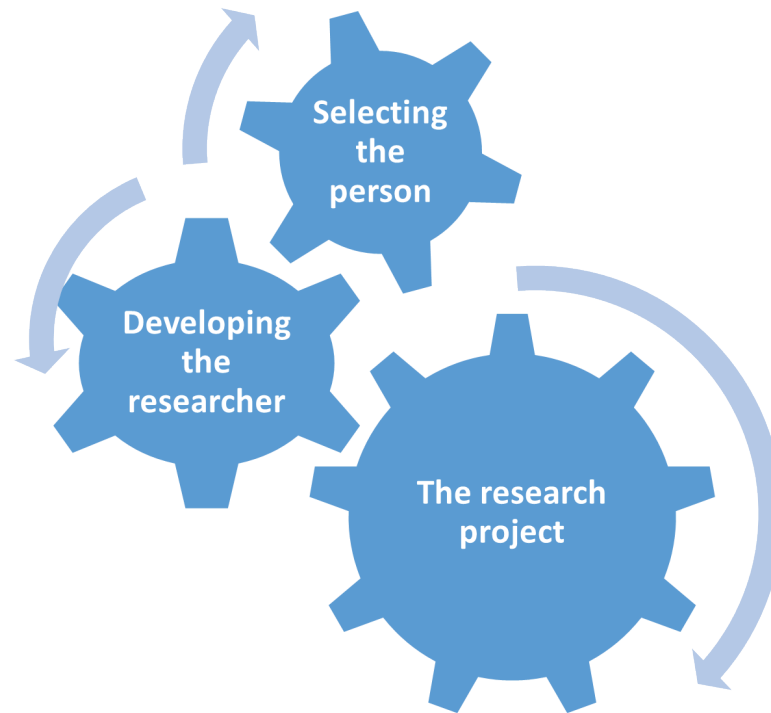


Figure 8.3 Three aspects of the Higher Degree Researcher recruitment process by Santosh Jatrana and Susan Gasson, used under a CC BY-NC-SA 4.0 licence

- a) **Selecting the person** – During the recruitment phase it is important to start to get to know the person. Early evaluation of researcher expertise and fit to your interests will determine the need to schedule online or in person meetings to progress discussion. During meetings consider if you communicate well together, and if you can contribute to their research education. Read work prepared by applicants to consider how they write and their ways of thinking. Some supervisors set written tasks or tests to prompt the preparation of work for review. Encourage the applicant to ask questions on a range of topics including discussion of available scholarships, cost of living, and lifestyle considerations. Take account of the whole person, and their life circumstances in determining whether you will become their supervisor.
- b) **Developing the researcher** – Consider applicants’ motivations for research studies. Their motivations will influence their drive for successful completion. Discuss their academic achievements, work experience, career plans, and any other criteria that can help you assess their fit for the project and award. Consider whether you can provide the right context for their research education. Will the project they propose allow them to realise their career plans? Have they the expertise and capacity to conduct the project they propose?
- c) **The research project** – At this pre-candidature phase supervisors need to test if they can work with the applicant to define a project that meets award requirements and can be realised using the resources available. Industry-related projects must balance the fulfilment of industry-driven goals with award requirements. Supervisors may need to ensure industry stakeholders take account of research requirements. Theoretical projects, on the other hand, may have more freedom of scope, breadth, and depth. As a

supervisor, your role is to assist the applicant in producing an original and significant knowledge contribution that meets award requirements.

Phase 2 – Pre and post-arrival strategies

Santosh's most recent student came from a South-Asian country. Her admission was affected by COVID-19 related delays. Santosh helped her complete application forms and made processes seem a little less daunting. She was granted a full scholarship, but her arrival was delayed and this impacted when she could attend induction. Santosh acted as a mentor and support as she applied for and obtained her student visa. On her first day on campus, Santosh met with her and introduced her to the staff in the office, oriented her to the facilities, and a range of centre services including health and accommodation facilities. Santosh introduced her to the graduate research office and encouraged contact with them for any award related questions. Then the student had a network to turn to for help. Santosh was very flexible about meeting times and sought to account for anything that would help her settle. Together they explored the provision of a prayer room, where to find ingredients to make culturally familiar meals, and the identification of part-time work opportunities.

As a supervisor make sure your higher degree researchers are aware of the different support services available and explain how to access these throughout their study period. Empower them to identify and use resources to build their self-confidence, adapt to the new social and research environment, and access tools to successfully manage their studies. Higher degree researchers should be ready to seek university and government guidance on a range of points, including those referenced below.

Pre-arrival orientation: Should include information on:

- visa requirements
- living and studying in the host country
- accommodation and support services
- tuition fee payment/ tuition waiver scholarship
- budgeting for living expenses
- welcome pack or guide from the university, information about the orientation program
- medical insurance
- community and social clubs and committees
- childcare and education systems for international students with children in the country

- transport options.

Post-arrival orientation: Institutional and government services may include advice on:

- access to financial resources/scholarships/opening the bank account
- health and medical services including university counselling services
- career advisory services
- academic and social support services
- applying for the student identity card
- building a peer group
- accessing research material/library resources/desk and computer
- accessing learning advisors/tutors
- acquisition of academic skills such as research methodologies, data collection, and storage, analysis, and writing.

Community networks and mentorship:

Foster a sense of community by working with your higher degree researchers to establish cohort meetings or peer networks. Connect international students with more experienced peers, alumni, and professionals in the field who can provide them with guidance and advice. Your institution or discipline may provide academic mentors for international students to ensure they have support and guidance throughout their studies.

Training and development:

Be alert to, and address, your higher degree researchers' developmental needs. Help them to develop a timeline that incorporates a professional development plan, publication plan, teaching appointments, conference presentations, an internship, etc. Show them how to explore and evaluate available professional development courses to prioritise those most relevant to their research and career expectations. Guide their appreciation of the tools and skills, support, and resources needed to succeed.

Cultural awareness:

Ensure that international students are acculturated to cultural differences. Some of these will support their socialisation and others their conduct of research within their host country. Socialization may include arranging informal meetings for new international students with other students and researchers, or assignment of a late-stage candidate as a mentor. Conduct of research advice may be covered in institutional inductions or online programs. If these are not available then supervisors may alert higher degree

researchers to relevant codes, and discuss with international candidates particularly how these may vary to other countries' research contexts.

Building trust and monitoring:

Ensure your meetings with higher degree researchers offer them a safe space where they can share challenges and celebrate successes. Create an open and supportive environment by:

- communicating expectations clearly and regularly
- providing clear, consistent, and regular feedback on their progress and performance
- addressing any cultural differences that may arise
- helping higher degree researchers identify resources or support that may be of help
- monitoring progress on a regular basis to ensure higher degree researchers stay on track
- encouraging higher degree researchers to take ownership of their work and become accountable for their commitments.

Open and frequent communication:

Communication is the key to ensuring that higher degree researchers know that they are seen and supported. Supervisors should not only offer regular feedback, guidance, and suggestions but also take time to listen to higher degree researchers' needs and concerns. Allow international higher degree researchers to adjust their research plans and be flexible in planning for their success. Flexibility can be required to address time and financial pressures and meet family and scholarship provider commitments.

Recognition/celebration/reward:

Supervisors can offer incentives and rewards for meeting specific goals. By taking them for coffee or lunch to celebrate the completion of a milestone, they will be motivated to achieve their goals in a timely manner and within the allotted timeframe. Recognise achievements and encourage the pursuit of research goals. Reward effort, incentivize risk-taking, and acknowledge growing persistence and resilience.

Phase 3 – Pre-confirmation strategies (0-1 year)

0-3 months

Santosh has had international higher degree researchers who struggle to meet

requirements for confirmation. To pre-empt this issue, she now encourages them to read others' work, and to keep writing and practicing. She asks them to schedule time every day to first read a paper, and then write about it. Initially, that may be a summary of the paper they have read. They are encouraged to look for and describe the gap in knowledge identified in the paper, and to begin to be alert to gaps in the literature.

She asks them to print out and become familiar with the requirements for the confirmation milestone. They can then set out when those steps must be met within their timeline and then work to that plan. Santosh explains that their writing develops through a series of drafts that she will review. Over time they can look back at previous drafts and see the progression of their writing through the preparation for confirmation period.

As the deadline for presentation approaches, Santosh encourages presentations to mentors, peers, and others, conducting up to four practice presentations before the confirmation event. That practice helps researchers learn to complete their presentations on time and to refine their slides based on audience feedback.

- Be patient and maintain regular contact (at least weekly) or assign a buddy (a fellow HDR who is further down the track) who they can talk to as they adjust to their new home and understand the expectations of the supervisors and the project.
- Discuss the project. If the project involves focused applied research, help them see the end goal and to write down some key milestones towards finishing the project. If the project is more theoretical, encourage them to read the literature around the key topic areas. Guide consideration of: Where is the state of the art? What is the knowledge gap?
- Understand higher degree researchers' key interests and strengths. Share the excitement of research education and the opportunity to build capacity and gain knowledge and expertise. Help them shape the project to build on their strengths and areas of interest. Share with them the scope and focus of the project appropriate for the knowledge contribution that will be expected by examiners. Discuss and prepare a timeline, account for the preparation of an ethics application, a data management plan, and a publication plan accounting for authorship arrangements as appropriate.

Up to 6 months

- Continue to guide higher degree researchers to theory and methods literature that will refine their research question or hypothesis. Guide them towards a problem worthy of research, a suitable method and methodology, and work with them to ensure that the resources and infrastructure are available or can be found.
- Encourage higher degree researchers to strongly engage with critical thinking activities. Set up a

reading group where higher degree researchers can discuss interesting papers. Reading groups provide a safe space for modelling and practising critical evaluation and questioning. Normalise higher degree researchers' giving presentations and contributing to peer review, so they come to see it as part of the researcher's life.

- The project may start taking a new direction. As the supervisor, guide your higher degree researchers – you may need to partially define the problem for some. Ensure they see a path forward for at least the next 6 months.
- Discuss the proposed structure of the thesis. If that includes publications or a future patent, explore what that means for the work to come. Refer them to the library or research office for further advice as needed.
- Review and discuss the timeline with higher degree researchers. Ensure you have accounted for and integrated the preparation of formal milestone requirements into project plan discussions. Ask yourself very honestly if the researcher can do a research award. Should they go towards confirmation? Is the project shaping up to be the best one for them? Do they need any additional supervisory assistance? Refer concerns to service providers for discussion as needed. (See also Chapter 2 and Chapter 5)

Towards confirmation (12 months)

- Enhance higher degree researchers' confidence and ability to communicate their research findings. Schedule more regular meetings and devote time to shaping their ideas. Set high standards for presentation of the results in reports and meetings, e.g., PowerPoint. Encourage peer review that discourages sloppy presentations. Explore presentation opportunities (e.g., conferences, competitions).
- Empower your higher degree researchers to lead their research work, and take ownership of their projects by the time they reach confirmation. If a researcher is not capable of this, be clear it is an expectation, and that it is their responsibility to work toward ownership. Well-defined research hypotheses/ questions with a well-articulated plan to address the questions (s) will give them greater confidence. Be clear that the project is progressing, even though outcomes may not yet be clear, and plans may need further refinement or revisiting – the aim is the creation of new knowledge.
- Revisit and revise the timeline. Review and revise as needed preparation of formal milestone requirements in project plan discussions. Consider adding the Three Minute Thesis competition or an internship to the plan. Schedule and complete confirmation. Discuss how activities align with research aspirations, career goals, and the timeline for completion.

Phase 4 – Post-confirmation strategies up to 24 months

After confirmation, one of Santosh's higher degree researchers struggled to progress. In discussion with the researcher, university, college, and others, Santosh took great trouble to arrange for the student to relocate to another campus. She had become too relaxed after confirmation and was not able to find the momentum required to progress well. Once she relocated, she rediscovered her passion for the project when surrounded by others at a similar stage of candidature, and in a homestay that let her connect with others with similar cultural values and practices. Santosh reminded the HDR that they were on the journey to completion together and that she could return to her original campus later if that would be helpful.

The vignette highlights the supervisor's role in taking a personal interest in each candidate and making the time to consider their concerns. Being open to revising arrangements to ensure they feel supported and heard is more pressing for international students who have a greater investment in, and more adjustments to make in realizing candidature success.

- Take time to celebrate confirmation. Encourage a break from work to refresh and prepare for the next stage of candidature. Emphasise that this is a marathon, not a sprint: research work requires a higher level of stamina than assessments in other award courses require.
- Refer them to a career counsellor to discuss their professional development plans and explore activities that can inform their future career. Ask: "What are your career plans after graduation?" Explore with them how to gain additional skills or build their resume outside their direct project to support their plans. Consider identifying a mentor from the sector where they wish to work or introduce them to networks where they may encounter future employers. For example, if the researcher is entrepreneurial, they can attend courses or workshops, or you can link them to your network of industry contacts – maybe support them to do an internship. On the other hand, for higher degree researchers seeking academic futures, guide them towards more high-impact publications, visits to international labs, presentations at conferences, etc. to expand their networks/ collaborations for the future. Consider with them their readiness, at least in the short term, for the globally mobile and precarious life of the early career researcher.
- Review their written skills. Discuss the preparation of a conference paper or publication to give them shorter-term goals to work toward that still progress their research work. Refer them to workshops or resources to build their writing skills for different genres.
- Start to expect professional presentations on their work to date. Use existing professional development courses if there are concerns about the quality of their presentation skills. Ensure they

see presentations of the standard required and discuss with them how their presentations could better reflect that standard. Seeing others benefit from attending conferences and international meetings, based on practice presentations within your group, may encourage improved effort.

- Structure your meetings to encourage higher degree researchers to ‘lead’ the project, and be accountable for the time remaining. If they are experiencing challenges, ask prompting questions like “So why do you think that happened?” or “What could you do differently next time to address that?” While encouraging them to initiate the next steps, ensure they feel you are listening and supporting them. Frame your role more as a critical friend than an expert. Address any likely delays or progress concerns. (See also Chapter 2)

24-36 months

- This is one of the toughest times for most higher degree researchers. They are under pressure to complete, need to make plans for transition to work and/or return to their home country, consider alternative funding as scholarship monies end, and pull together the chapters of the thesis to fully articulate their contribution to knowledge.
- If things have not gone to plan, supervisors can help higher degree researchers consider applying for extensions. International student services can explain implications and processes for extensions: support visa and funding applications, and provide additional support.
- Supervisors need to find extra time to engage in data interpretation and paper write-up as higher degree researchers push to create their first complete thesis draft.
- Revisit the meeting schedule, timeline, and supervisor processes for review of written work. Set realistic goals and meet them as requested. Ensure higher degree researchers provide at least monthly reports on progress against the agreed timeline, and attach the latest drafts of written work for review.

Phases 5 – The remaining time i.e, Finalising results and writing up

Santosh’s higher degree researcher decided to study toward a thesis by publication, though he noted her preference for a monograph. She warned him that she would not accept publications in low quality journals. After two and a half years he had not had any papers accepted for publication. He had moved to Australia with family, and simultaneously a family member required medical support. He chose to buy a car to be more able to help with medical appointments. This put him under additional pressure financially. Helping with medical appointments also took time away from study. He became anxious that his

scholarship was going to end in 6 months (at 3 years), and that he was nowhere near completion of a thesis by publication. Family matters were very distracting and he was under severe financial pressure. Santosh calmed him by taking stock with him. He had completed all the analysis for the thesis chapters. They prepared a rationale for an extension request, setting out the additional time required. They then prepared a tight timeline, detailing the work for him to write and Santosh to review. Santosh made it clear that the timeline was non-negotiable. She also referred him to support services to get advice on how to manage the stress and begin to address some of his financial and family difficulties. The researcher delivered a thesis by monograph, applied for residency, and is now settled and working full-time in Australia.

This is a very stressful phase for most researchers. Be ready to give them more time and to build their confidence.

1. Some students may need you to co-write with them to motivate them. i.e., sit in the same room (or join them on videoconference) and literally shape the page.
2. Some will give you finished whole chapters. Santosh discourages that initially until they are writing confidently and well. Some sections may need more feedback and more iterative drafting and review.
3. Read the whole thesis to consider the knowledge contribution. It is essential to simultaneously ensure that the writing is clear and that the big-picture thinking reflects the original or novel nature of the work. Involving other critical friends in reading the work can assist. Consider the need to find funding and time to employ an editor. Discuss the table of contents and headings to check for consistency and flow of the argument. Reviewing the first sentence of each paragraph within a chapter can ensure the argument flows through the work. Mind mapping on a whiteboard or large piece of paper may help to clarify the key findings.
4. Universities may require a final milestone event (a “pre-completion seminar”) where the work is presented to an audience and reviewed by a panel of experts. The panel is asked to advise if the timeline is suitable, when an examinable thesis may be ready for consideration, and for final feedback. Document responses to feedback as practice for responding to examiner comments.
5. Regular meetings and a checklist setting out a timeline for submission of drafts for feedback will help you keep track of progress. Ensure supervisors have established an efficient way to work together to provide timely feedback. Agree on how you can best progress smoothly toward a final draft.

Phase 6 – The final products

1. The examination process may involve an oral defence or provision of the thesis for review.

Supervisors are often responsible for the nomination of suitable examiners (check your institutional or national guidelines). Supervisors need to be aware of the thesis examination process and support the student to submit the thesis in a suitable format to meet examiner and institutional requirements.


2. Make time to celebrate. Having a physical thesis to hand can be important. A higher degree researcher ceremonially giving a copy to the supervisor, acknowledging the shared challenge overcome, can be joyous.
3. By the end of the candidature, the higher degree researcher should have become the master of their chosen field, and know more about it than you.
4. You can support them by providing references for job applications and discussing future work they may wish to plan in terms of postdoctoral positions or funding opportunities, grants, publications, teaching, and research projects.


This chapter has described a broad process that you can go through in supervising international students, given the various challenges that they may face, particularly if they come from non-English speaking countries. The chapter explained the Higher Degree Research Supervision Tool model, with its six steps from recruitment to graduation, and the support that a supervisor can provide to help an HDR student become an independent researcher by the end of their research journey.


Evidence of practice


Are there points made above that you might incorporate into your supervisory practice? Consider one of your current international higher degree researchers who has a particular challenge you wish to address. Articulate that challenge, and then explore your practices, patterns of celebration and reward, and the higher degree researcher's networks accessed or accessible. Are there other practices you could use to better address the challenges? Try applying up to three of those practices and then write up what happened and any next steps required to resolve the challenge faced.

Additional Resources


While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

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FUTURE FOCUS

9. BUILDING LITERACIES FOR THE RESEARCH LIFECYCLE

Claire Ovaska and Stephen Anderson

Why read this chapter?

In many universities, supervisors and higher degree researchers (HDRs) benefit from services and resources offered by their academic library. Academic librarians are experts on digital, information, and research literacies, and can help your higher degree researchers gain competency in all these areas. The following sections will introduce you to the research lifecycle and point to librarian support during the research journey. Supervisors will also gain tools and ideas for higher degree researcher supervision.

In this chapter we will overview:

1. The research lifecycle journey including its intersection with academic librarian support
2. Development of a research plan to keep an higher degree researcher candidature on target
3. Selection of bibliographic software to manage citations and to facilitate higher degree researcher-Supervisor collaboration
4. The value of data management and sharing for higher degree researcher recognition and reuse
5. Development of a publishing strategy for higher degree researcher recognition and career development
6. Development of an online presence for wider higher degree researcher engagement and impact
7. Methods for measuring higher degree researcher research impact.



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A key role of supervisors is to ensure higher degree researchers become familiar with, and apply good information literacy practices to inform their research. In developing capacity supervisors will model their own practices as researchers, and refer higher degree researchers to the resources and experts in accessible library, e-research and research services. This chapter uses a research lifecycle to illustrate and frame discussion of the range of skills required, sources of support, and strategies for building literacies.

1. A quick overview of library support for the research life cycle

Figure 9.1 illustrates the cyclical nature of the research lifecycle and where it intersects with academic librarian support. In some higher education institutions, elements of the research lifecycle may also be supported by their research office or other institutional units. The rest of this chapter provides an overview of the major phases of this diagram. The underlying theme is planning for higher degree researcher success.

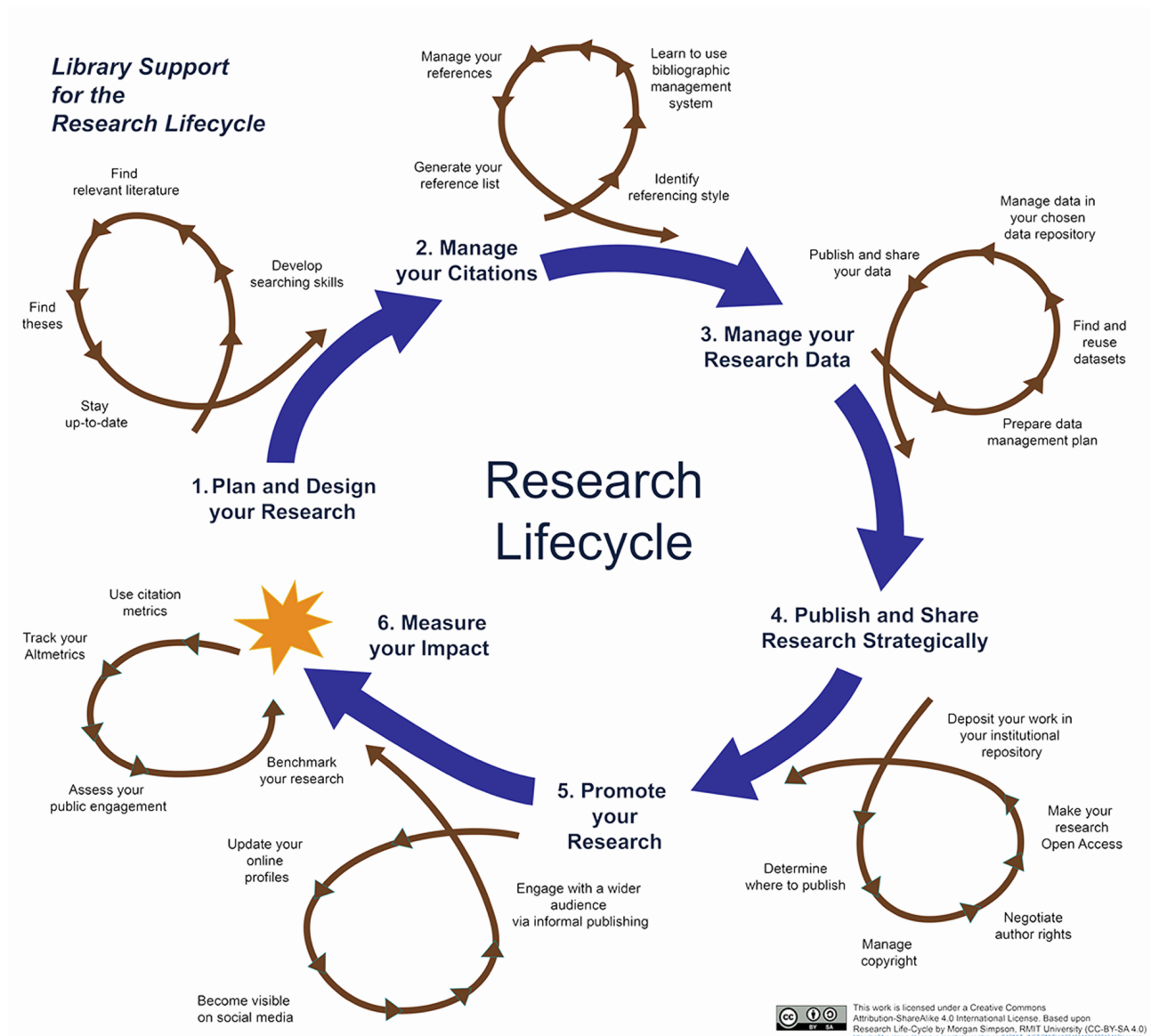


Figure 9.1. Library support for the research life cycle by Claire Ovaska, used under CC BY-SA 4.0 is a derivative of “Research Life-Cycle” by Morgan Simpson, RMIT University

2. Plan and design your research

A higher degree researcher research project is a significant undertaking and it is helpful if supervisors emphasise the importance of having a detailed research plan. A plan will enable your higher degree researcher to monitor their own progress and steer their project towards timely completion. We have seen many instances of unnecessary stress for higher degree researchers and supervisors — and requests for extensions — because of inadequate planning.

Benefits

A comprehensive research plan:

- clarifies the research question
- establishes the overall research design: components may require different designs, analyses, and timeframes
- identifies potential challenges: such as ethics approval, data collection, and research site access
- maximises resources: including time, funding, and personnel
- provides milestones: facilitating timely completion, identifying areas for improvement, and detailing work to be done.

Research parameters

Higher degree researcher research plans should follow discipline parameters and these can vary widely. A creative arts higher degree researcher might create a literature review, a major creative work, and an exegesis, while a medicine higher degree researcher might produce a systematic review and conduct a clinical trial. Having research parameters will minimise duplication of effort across the project.

Research outputs

What is the publication plan for articles, chapters, and books arising from the research project? What are the requirements of the targeted journals? If your higher degree researcher is part of a team, then who is responsible for what output?

Notes, collaboration, and data storage

How will your higher degree researcher take, store, and share their research notes? What text, images, videos, documents, audio files or other data needs to be recorded? Your higher degree researcher's understanding of what needs to be kept will help identify storage options.

- Storing your research: refer to *Managing your data* section of this chapter
- Collaboration tools: may include Open Science Network, Google Docs, Electronic Lab Notebook, Evernote, and Trello

Developing a research question and searching strategy

It can be helpful if supervisors and higher degree researchers make a joint appointment with their librarian to discuss search strategies. Librarians are searching professionals with academic database expertise, supervisors are seasoned researchers in the field, while higher degree researchers are probably not clear on what resources they need. We have found that when everyone meets together, the higher degree researcher leaves with a clearer sense of the task at hand. Appointment discussion points could include:

- What and how many databases need to be searched?
- Do relevant databases use subject headings or keywords?
- Are there discipline registries to be searched?
- Is there relevant grey literature?
- What primary, secondary, or tertiary sources need to be found?
- What publication types or sources are acceptable?
- What is required by targeted journals?

Examples of practice

Help your higher degree researchers understand the importance of planning their research journey with stories (good and bad) from your own career, or from your institution or discipline.

3. Manage your citations

Effective management of citations ensures higher degree researchers can provide clear evidence for their arguments and hypotheses, and avoid plagiarism. Referencing done by hand is time consuming and prone to transcription errors. Using citation or bibliographic management software means that with a few clicks your higher degree researcher can insert citations throughout a document in a preferred referencing style and save citations for future use. The most popular examples are EndNote, Zotero, Mendeley, and RefWorks. Each has its strengths and weaknesses, but they all make referencing easier.

Benefits

Using bibliographic software:

- builds a persistent library of research materials
- enables importing of citations from academic databases
- tags, labels, and groups references for your research
- saves, manages, and annotates PDFs
- reduces the potential for plagiarism
- manages referencing style compliance.

Watch this video [1:31] to find out more about the benefits of using citation management tools.



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Choosing a citation manager

An important part of the research plan is to identify which citation software will be used. All parties need to be familiar with the software to use it effectively and efficiently. Also consider possible collaborations and the software used by colleagues. We have seen instances where the higher degree researcher and supervisors are familiar with different citation systems (or not familiar with any at all), causing work to be lost or rendered inaccessible.

Fee-based citation software may be available through your university library, while others are freely available online. Once you have decided which program to use, we recommend supervisors and higher degree researchers attend training on how to use it (unless you are an expert user). If your library or institution does not offer training, go to the software's website for download instructions and training.

Top tips for citation manager success

- Expect that learning new software will take time
- Take advantage of online tutorials, instructions and troubleshooting information
- Integrate citation manager use into your research habits
- Check the software is producing the required referencing style correctly
- Check imported citations for missing information or mistakes.

Examples of practice

Help your higher degree researchers understand the importance of managing their references with stories (good and bad) from your own career, or from your institution or discipline.

For more citation management resources refer to the reading list.

4. Manage your research data

Managing research data effectively and sharing it with others can unlock many benefits for researchers, and is an expectation for higher degree researchers today. It is helpful if supervisors encourage higher degree researchers to develop a research data management plan (DMP) early on to safeguard their data, and to determine responsibilities and actions required. Connect with your academic library, research office, or data management experts for more information.

Benefits

Published data:

- is another way to get noticed
- may be cited by other researchers
- can lead to collaboration
- facilitates transparency, trust, and respect
- may be required for project, journal, or funder compliance
- can be reused in future projects
- supports fair and inclusive access to research.

Research data management planning

Developing a data management plan (DMP) is the first step. A DMP establishes a link between the project and the data, and can inform research activities. Your higher degree researchers will need to consider and document:

- Responsibilities relating to data management
- Ownership and intellectual property considerations
- Data collection and analysis methods
- The kinds of data that will be generated and its organisation
- Data documentation (metadata)
- Data storage, backup, and collaboration needs
- Changes to the research project
- Measures to protect sensitive data
- Post-project data access, retention, and disposal
- Requirements for implementing the DMP



Figure 9.2. Research Data Management – Discover, Reuse & Cite by Gaalen Pinnock is used under CC BY-SA 4.0

If your institution doesn't support DMPs, supervisors can direct higher degree researchers to open-source tools such as DMPTool which provide templates and guidance for developing robust plans.

Data sharing and publishing

When it comes time for higher degree researchers to share their data, generalist repositories such as the Open Science Framework and Zenodo are freely available, and well-known. However, your higher degree researcher may need to deposit their data with your university, national or discipline-specific repository, or as recommended by a specific journal or funder. Supervisors can also suggest FAIRsharing and Re3Data registries to identify a suitable data repository.

Examples of practice

Help your higher degree researchers understand research data management and data sharing with stories (good and bad) from your own career, or from your institution or discipline.

For more data management resources refer to the reading list.

5. Strategically publish and share your research

Publishing and sharing research results and new knowledge is a responsibility of all researchers. A combination of scholarly and informal publishing could lead to improved research **engagement** and **impact** by deliberately targeting key academics, government, and industry groups as well as the wider community. Another consideration is the enormous change that academic publishing has experienced in recent years. We have seen the rise of new technologies, publishing via Open Access, predatory publishing, research funding pressures, and more. Today's already time-poor researchers cope with so many demands on their time that it is important to have a plan or strategy to follow. Supervisors and higher degree researchers are encouraged to connect with their academic librarian for assistance related to the content of this section.

Benefits

Publishing and sharing strategically can:

- increase engagement, reuse and citations for research outputs
- highlight research output distinctiveness making it stand out
- strengthen future grant, job, and promotion applications.

Strategy and being distinctive

Ideally, higher degree researcher research publishing choices should work to increase audience engagement and impact and contribute to career growth. This requires the development of a publishing strategy that is personally catered to them. Questions to pose to your higher degree researchers could include:

- Who should you collaborate with (locally, nationally, and internationally) to build your career? How can you make that happen?
- Which government, industry, or community groups should you aim to publish with?
- What is the audience for this research and how can it make a difference?
- How much should you publish? How do you need to organise yourself to make this happen?
- What is unique about your research? How could you capitalise on your distinctiveness?
- How can you vary where you publish to attract new audiences and increase impact?

Understandably, a researcher's publishing strategies will evolve over time to allow for changing

opportunities and circumstances. Supervisors could suggest higher degree researchers revise their strategy at least once a year. Alternatively, revision will be useful in the lead up to performance appraisals, job applications, promotion rounds, or grant applications.

Deciding where to publish and which conferences to attend

Deciding where to publish requires consideration. Where established researchers publish may vary significantly from where a novice researcher can publish. Higher degree researchers should ask themselves some questions and develop a shortlist of journals, book publishers, and conferences:

- Should I publish Open Access articles to maximise citations and engagement? Does my funder require me to?
- What are the key scholarly journals, publishers, or conferences in my reference lists?
- What journals, publishers, or conferences do my supervisors recommend? Which ones are favoured by my discipline?
- How can I reach my desired audience?
- Who should I meet and network with at conferences?
- What is the scope of my shortlisted scholarly journals, book publishers, or conferences?

Due diligence: Predatory journals, book publishers and conferences

Higher degree researchers should be aware of the increasing number of predatory publishers to be avoided. Predatory publishers have taken advantage of the Open Access, author-pays, academic publishing model to make enormous profits. These predatory and deceptive publishers are known to:

- make dubious claims about the quality or credentials of a journal, conference, or publisher
- provide limited editorial support
- fail to meet established peer review standards
- charge an article processing fee disproportionate to the work they undertake
- falsely claim that the publication is included in reputable indexes (e.g., Scopus or Web of Science)
- adopt a journal or conference name that is easily mistaken for that of a respected entity
- publish journals that include material from multiple, unrelated disciplines
- solicit research outputs or conference attendance by emailing authors
- have shallow websites with few policies and guidelines.

Higher degree researchers also need to become familiar with current predatory publishing practices. Good journals can be hijacked by profiteers, while some predatory journals have become more acceptable over

time. Shifts in journal quality could arise from a change in journal ownership, editorial board changes, or from a decision to do better.

Quality checks

When deciding where to publish a manuscript or which conference to attend, there is no single indicator of quality that Supervisors and higher degree researchers can check. It is essential that researchers use multiple indicators and conduct multiple checks.

Watch this video [1:44] **!Think ✓ Check > Submit** about journal checks. These principles also apply for choosing conferences and book publishers.



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Use these checklists to determine the quality of a journal, conference, or book publisher:

- !Think ✓ Check > Submit (journal articles)
- !Think ✓ Check > Attend (conferences)
- !Think ✓ Check > Submit (books and chapters)

Informal platforms and informal publishing

Social media platforms and informal publishing can be useful for building professional networks, facilitating wider academic and community engagement, and publicising research. Personal preferences and your experience of disciplinary practices will help your higher degree researchers determine which social media platforms to use. LinkedIn, Twitter, blogs, Facebook, Threads, Weibo, YouTube, and TikTok are popular options. Regular engagement is essential for success. Informal publishing on research news sites such as ScienceDaily or The Conversation is another way to promote research.

How we work at The Conversation explains how *The Conversation* publishes globally, and the process for making articles available for republishing by major news outlets (e.g., ABC News, CNN, BBC, The Jakarta Post, and The Guardian). Timing is everything for your higher degree researcher to make a successful pitch, such as in the lead up to relevant a current affairs event, or prior to your higher degree researcher announcing a research breakthrough.

HDR Activity 1

Reflect on your career goals (or who do you want to emulate) and how your research outputs could help you achieve this goal. Note your ideas and revisit and revise them from time-to-time.

Examples of practice

Help your higher degree researchers understand the importance of developing a publishing strategy and share stories (good and bad) from your own career, or from your institution or discipline.

For more publishing resources refer to the reading list at the end of this chapter.

7. Building a professional online identity

Building a professional online identity facilitates being noticed beyond your immediate sphere. Online profiles have become tools to improve and demonstrate engagement and impact. Encouraging your higher degree researchers to build and maintain key online profiles is a valuable part of their career strategy. This section provides information and tools to help your higher degree researchers establish professional online identities. You can also connect them with your academic library or research office for assistance.

Benefits

A solid and professional online identity can:

- support job, promotion, or grant applications
- promote achievements and research outputs
- facilitate citation and other metrics
- facilitate professional and community engagement
- connect with collaborators
- avoid misattribution of research outputs

- disseminate research to broader audiences.

Apply these ideas in practice

Most higher degree researchers will arrive with an existing online footprint that they are probably taking for granted. On commencement of their studies, they need to reflect on this aspect of their lives by:

- considering what online profiles are best suited to supporting their research and career journey
- considering what online profiles they are prepared to keep current
- taking advantage of all editable fields to evidence the breadth of their activities and interests
- considering privacy issues for professional and personal online identities.

HDR Activity 2

Search for yourself online:

- note positive material for sharing or reuse
- clean up undesirable content
- update social media profiles or close unwanted accounts

It is recommended that higher degree researchers repeat this activity at least once a year.

ORCID

ORCID profiles are free and belong to their creators. The most important role for an **ORCID** profile is disambiguating individual researcher's names and outputs from others with similar names. This is critical in an era where algorithms match authors with research outputs. As a result, many employers, publishers, and funding bodies now ask researchers for their ORCID numbers. This disambiguation purpose means your higher degree researchers should only have one profile over the life of their careers (removing additional or duplicate profiles).

Your higher degree researchers can find out more with the following video describing ORCID [4:16]



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HDR Activity 3

Search ORCID for your name spelled out in full, then try your initials and surname. Were you surprised at how many researchers have your exact or similar names to you?

HDR Activity 4

Create and/or update your ORCID profile. If necessary, reset your login details to regain access.

Google Scholar

Google is the world's most used search engine, so it makes sense for higher degree researchers to set up a free Google Scholar profile. They can enhance their profiles by adding a photograph, research keywords, and a link to an ORCID profile. Once set up, they require little maintenance and will provide your higher degree researchers with comprehensive citation data.

Other online profiles

Your higher degree researchers may be interested in other online profiles to build their network and share research outputs. Platforms such as ResearchGate and Academia are primarily used for scholarly networking. LinkedIn showcases professional activities and facilitates networking. Other popular options include Twitter, blogs, Facebook, Weibo, Instagram, Snapchat, Threads, YouTube, and TikTok.

Examples of practice

Help your higher degree researchers understand the importance of developing a professional online identity and share stories (good and bad) from your own career, or from your institution or discipline.

For more professional online identity resources refer to the reading list.

8. Measuring research impact

The need to measure research performance is intrinsic for contemporary higher education institutions, and this has traditionally been achieved through research metrics. This is problematic as no one metric can sum up the contribution of a researcher or research output, or account for differences between disciplines and career stages. Some higher degree researchers may be able to use bibliometrics to gauge their productivity, citations, and collaborations. However, alternative metrics and qualitative evidence are probably better suited to evidencing impact for emerging researchers. Here we provide information and tools to help your higher degree researchers craft their impact narratives. You may also want to connect with your academic library or research office resources and experts.



Benefits

Building an impact narrative can:

- support publishing decisions
- support job, promotion, and grant applications
- identify potential collaborators and workplaces.

Bibliometrics

Bibliometrics refers to quantitative analysis of journals and article citation data and is rooted in formal academic publishing. Bibliometrics inform (and often confuse) researchers, higher degree researchers,

and stakeholders. Broadly, journal level metrics are used as indicators for the prestige or quality of a journal, and not individual researchers or outputs. They may provide useful data for deciding where to publish. Scimago is Elsevier's free journal-ranking product. Article level metrics can be used to assess the **productivity**, apparent **quality**, and **collaborations** of researchers and research groups, but they are less useful for assessing fledgling higher degree researcher researchers. Researchers can access free citation data by setting up a Google Scholar profile.

Find out more

Are your higher degree researchers confused about metric terms such as Field-Weighted Citation Impact (FWCI) and h-index? Direct students to the Metrics Toolkit for clarification.

HDR Activity 5

Help your higher degree researchers understand the **responsible use of metrics** for research assessment. Have them:

- read Harnessing The Metric Tide for key principles, page 24
- watch the Leiden Manifesto [4:28] for using research metrics for research evaluation
- read the Declaration on Research Assessment (DORA) recommendations for research evaluation stakeholders
- reflect on their learnings.

Alternative metrics

Alternative metrics are used to gauge research impact beyond traditional academic publishing, and could be useful for higher degree researchers who are gaining publicity and/or are active social media users. Alternative metrics track research outputs via a **DOI** or other persistent identifiers in a variety of social and news media sites, policy documents, blogs, Wikipedia, and more. higher degree researchers could manually record their views, downloads, mentions, followers, sales, etc. Alternatively, Altmetric collates

many alternative metrics in a neat package. It is a paid platform but it does offer some free functionality for individuals and institutions.

Your higher degree researchers can find out more about Altmetrics video [2:59]



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Other sources of evidence

Higher degree researchers can look beyond metrics to other sources of evidence to support job, promotion, and grant applications. Evidence alternatives could include letters of appreciation, awards, positive reviews, and more. Encourage your higher degree researchers to develop a system so that their qualitative evidence is stored and accessible for future use.

Examples of practice


Help your higher degree researchers understand the value of measuring research impact and share stories (good and bad) from your own career, or from your institution or discipline.

For more research benchmarking resources refer to the reading list.

Conclusion

In this chapter we have covered major phases of the research lifecycle that your higher degree researchers will navigate during their studies. The long list of ‘things’ they need to consider and achieve may seem daunting, but our central message is the value of planning. Project planning, citation management, data management, publication strategies, research promotion, and career planning are all crucial. Though never easy, solid planning contributes to lasting success. Remember, you and your higher degree researchers are not alone. If you reach out to your library or research office, you’ll find partners dedicated to higher degree researcher success.

Additional Resources

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

Auckland University of Technology. (2023). *Which reference manager? Comparison of EndNote, Mendeley and Zotero*. <https://aut.ac.nz.libguides.com/managingreferences>

Committee on Data. (2022). *Research data management terminology*. <https://codata.org/initiatives/data-science-and-stewardship/rdm-terminology-wg/rdm-terminology/>

Digital Curation Centre. (n.d.). *Example DMPs and guidance*. <https://www.dcc.ac.uk/resources/data-management-plans/guidance-examples>

Directory of Open Access Journals. (n.d.). *Find open access journals and articles*. <https://doaj.org/>

Feldman, Z., & Sandoval, M. (2018). Metric power and the academic self: Neoliberalism, knowledge and resistance in the British university. *TripleC*, 16(1), 214–233. <https://doi.org/10.31269/triplec.v16i1.899>

James Cook University Library. (2023). *Publishing academic research*. <https://libguides.jcu.edu.au/publishing>

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United Nations Educational, Scientific and Cultural Organisation. (2021). *Open science*. <https://en.unesco.org/science-sustainable-future/open-science/recommendation>

10. EMPOWERING RESEARCH SUPERVISORS: DEVELOPING INFORMATION LITERACY IN HIGHER DEGREE RESEARCHERS

Lyndelle Gunton; Sal Kleine; and Stephanie Bradbury

Why read this chapter?

Every day we all apply skills to find, evaluate, organise, and use information. This may be as simple as searching for a specific product in an online store, where the consequence of employing an ad hoc approach is low risk. However, in the context of conducting research in higher education, understanding how to “seek, evaluate, use and create information effectively” (United Nations Educational, Scientific and Cultural Organization, 2023), or information literacy, is key to producing credible and reliable research outputs.

Information literacy empowers higher degree researchers to achieve their research goals. Developing the information literacy of higher degree researchers ensures they can achieve program milestones, become valued contributors in the wider research environment, and can improve their employability.

This chapter will be of benefit to research supervisors and decision-makers in institutions seeking to:

- actively develop higher degree researchers' information literacy
- strengthen the role of supervisors as an influencer of knowledge and skills development that inform information literacy
- consider how to position information literacy within the broader development of the higher degree researcher.

Key takeaways

- Developing sophisticated, generic, and discipline specific information literacy is an essential part of learning to be a researcher. Opportunities for training should be

incorporated into early stages of any higher degree research program.

- Library staff can provide valuable expertise and support in the development of information literacy, and form part of your higher degree researcher's support network and your own research community.
- Quality, open educational resources are available to use in supporting your higher degree researcher's skill development in finding, retrieving, managing, and using information effectively.
- Proactively seeking opportunities to discuss these topics with higher degree researchers may support your own upskilling and maintenance of relevant skills in these areas.
- As a supervisor, you play an influential role in the development of information literacy for your higher degree researcher.



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A framework for developing information literacy skills for research

A commitment to developing effective skills for finding and using information is not always seen as a priority in the context of a broader research skills program. We know that the early stages of a research degree can be exciting but also stressful. Often, the priorities of both the higher degree researcher and supervisor are elsewhere, particularly if the researcher is also negotiating additional challenges such as finding accommodation, adjusting to living in a different country, navigating a second language, or any combination of other factors.

However, there is a need to focus on developing advanced information literacy early in the research program. This derives from understanding that the relevant skills and knowledge associated with effective searching, accessing, retrieving, organising, and using information are essential for success. Appropriate skills development will instil good habits, reduce stress, and potentially prevent issues from emerging later in the research program.

Some higher degree researchers commence their studies with an advanced understanding of these important skills. They benefit from being adept at using systems and tools to make effective use of the information environment. However, many are neither equipped nor aware of the gaps in their knowledge

and skills, or the impact that may have on their progress. While higher degree researchers may become aware of their need to upskill from a librarian or other sources, encouragement from supervisors can ensure that information literacy training is prioritised.

Research shows that supervisors can have a significant influence on the way, and the extent to which, higher degree researchers develop effective information literacy (United Kingdom Research Information Network, 2011). Evidence also suggests that higher degree researchers will often seek guidance or help from their supervisors before exploring other avenues, such as librarians (Harrington, 2009). Therefore, supervisors need to focus higher degree researchers' attention on the importance of information literacy and, sometimes, assist in identifying gaps and potential opportunities for training.

The questions that need to be asked are:

1. How can this be done in a way that ensures consistent development of advanced information literacy across all higher degree researchers, regardless of educational, cultural, professional, or scholarly backgrounds?
2. How can higher degree researchers access foundational support to develop nuanced information literacy and knowledge transferable to discipline specific fields of study and research contexts?

A 2022 review of Australian doctoral employability indicated that supervisors are the primary educators of higher degree researchers (Chen et al., 2023). While the review highlighted the uncertainty around researcher training requirements and supervisory roles, the findings supported the need for, at least, doctoral supervisors to work in partnership with other professionals to develop their higher degree researchers' career learning requirements (Chen et al., 2023).

Supervisors may not have the expertise or time to share and train their higher degree researchers in finding and managing information. This is where the value of partnering and communicating with library (or other research support) staff is critical. Where this service and support is absent, the availability of quality, freely accessible training resources for information literacy is essential. With these supports, supervisors can successfully guide their higher degree researchers to:

- develop foundational skills to use information for research independently and effectively
- prepare for their first higher degree research milestone
- understand and operate in the scholarly publishing environment
- ensure they have the skills and capabilities to conduct research now and into the future, regardless of the academic, professional or industry context in which they find themselves
- develop a robust support network by connecting with library staff, other research support experts, and peers where available.

The encouragement of supervisors is acknowledged as valuable in motivating higher degree researchers to develop their information literacy. However, more formal methods of training are seen as critical in

ensuring the effectiveness of these skills (Zhao, 2019). Participation in programs developed and delivered with, or by, librarians is recommended where available. If not, the use of recognised quality training programs is preferred, such as Advanced Information Research Skills (AIRS).

The Advanced Information Research Skills (AIRS) framework

AIRS is one example of how information literacy training can be effectively delivered for higher degree researchers. It is a model that highlights the value of support for higher degree researchers by the library and other areas of a higher education institution. AIRS learning content is freely available from a public facing website, which can be accessed by anyone at any time (Figure 10.1). It is an open educational resource that is Creative Commons licensed (CC BY-NC-SA 4.0) so it can be freely used and adapted for training purposes.



Figure 10.1 AIRS Home Page by QUT Library, used under a CC BY-NC-SA 4.0 licence

The model and curriculum

AIRS is a mandatory, accredited, coursework unit for all Queensland University of Technology (QUT) higher degree researchers enrolled in Doctor of Philosophy (PhD), Master of Philosophy (MPhil), and Doctor of Education programs. QUT Library has delivered advanced information literacy training via AIRS since 1989. The reputation and credibility of AIRS is evidenced through its acknowledgement or

adoption by many other higher education institutions across Australia, for the purpose of training higher degree researchers.

AIRS seeks to set the standard in information literacy training for higher degree researchers by providing current, relevant, and credible learning outcomes, and enables active engagement through quality, innovative learning and teaching strategies. There is a focus on ensuring AIRS meets the transdisciplinary and transferable skill needs of contemporary researchers, while continuing to meet organisational priorities, as well as industry and Australian higher education standards.

To best meet higher degree researcher needs, the AIRS program focuses on knowledge and skill development that is important for the early stages of candidature, namely finding, organising, and using information, and embeds the skills required to effectively scope the initial literature review for the research topic. Offering AIRS at the commencement of the research degree builds researcher confidence as they approach the first program milestone. This is evidenced by extensive data showing that most higher degree researchers achieve strong outcomes in the unit. Research also indicates that information literacy training attendees are more likely to seek support in later stages of their research degree from library staff, having developed those connections already. This can clearly have a flow on effect beyond any training in which higher degree researchers participate (Zhao et al., 2023).

AIRS currently consists of a series of online modules (Figure 10.2), workshop recordings, learning activities, and knowledge checks that step learners through information literacy development in a logical way. This aligns with the research lifecycle and the journey that higher degree researchers are likely to take during their program. More specifically, attention is focused on the development of essential skills for finding, evaluating, managing, and using information relevant to a research topic. This is supplemented by enhancing capabilities in research integrity, research data management, scholarly publishing, publication metrics, and research impact.

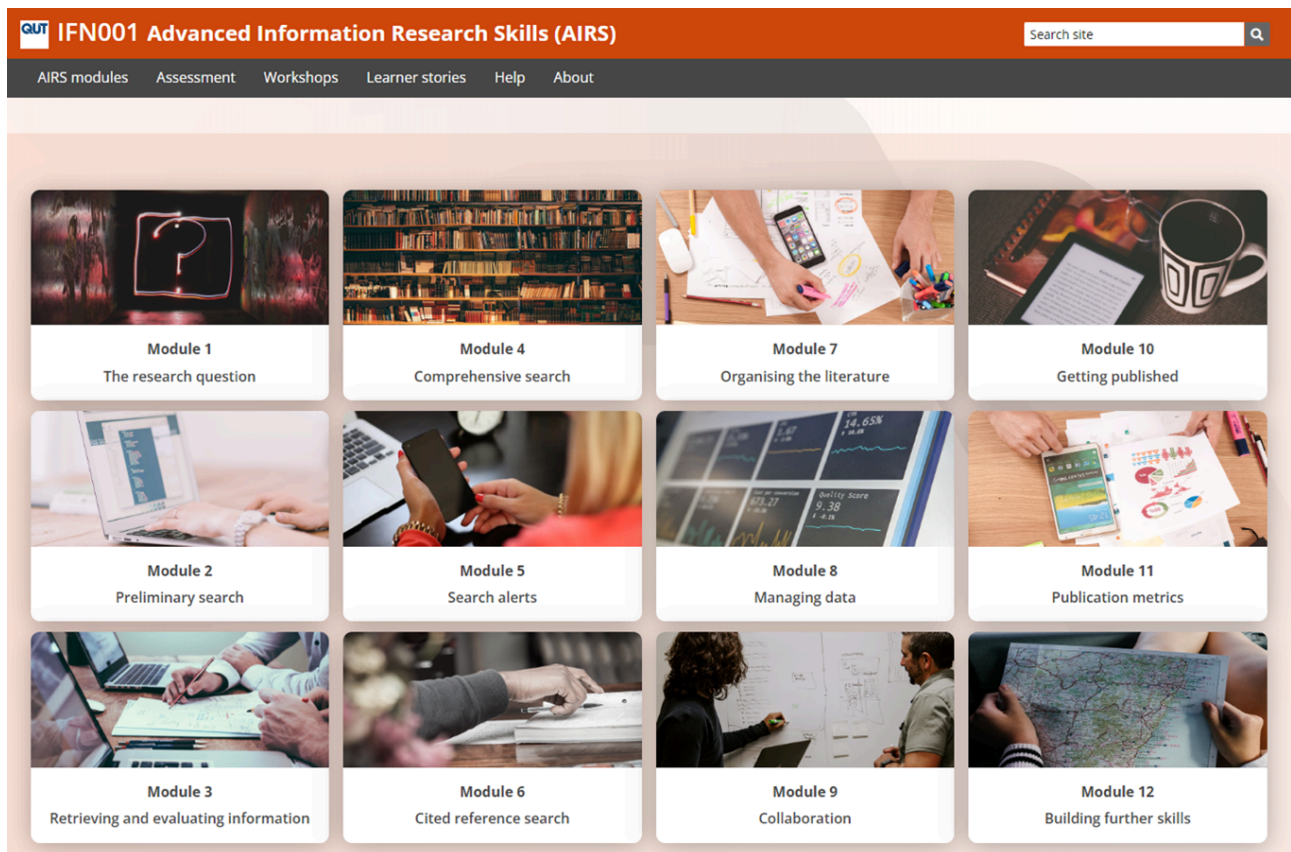


Figure 10.2 Modules offered by AIRS by QUT Library, used under a CC BY-NC-SA 4.0 licence

The AIRS learning objectives and learning resources have been informed by organisational information literacy frameworks, based on the Australian and New Zealand Information Literacy Framework standards (Bundy, 2004). Further, practitioner research and feedback from students and supervisors have also continued to shape the curriculum. This has led to an increased focus on the development of transferable skills, as the needs of many higher degree research graduates have shifted to include other career pathways outside academia.

Evaluation is key to delivering a program that meets user needs. The ongoing effectiveness of information literacy training can be evaluated in a number of ways. Without an accredited form of instruction that includes formal assessment, these evaluation strategies may be more informal. This could include consideration of session attendance numbers, the qualitative and quantitative data from participant feedback surveys, or the results of learner self-assessment of skill levels before and after training. These mechanisms can enable the development and evaluation of higher degree researchers' learning outcomes and skills, to support them throughout their research studies and beyond (Zhao et al., 2023).

Learning and supervisory support for skills development

AIRS is one example of a framework that provides supervisors and higher degree researchers with a clear approach for the development of capabilities in a contemporary research context. We know that higher

degree researchers start their programs with a variety of experience, expertise, and cultural and education backgrounds. It is further acknowledged and understood that higher degree researchers don't know what they don't know. By supporting and promoting an AIRS-style approach to information literacy training, supervisors can ensure that higher degree researchers do not miss the opportunity to develop important skills from ignorance or over confidence.

When information literacy training is mandatory, expectations are formal and clear, and participants develop consistent, generic skills in finding and managing information for research. However, building on these generic skills with subject specific information resources and tools is vital for information literacy in any field of research. Supervisors can play a key role by explaining the merits of time and effort spent in building these skills. This may extend to guidance on conducting literature reviews and synthesising information from multiple sources and using designated referencing styles and citation management tools. There are further opportunities for supervisors to share information about key authors, journals, and other scholarly publications, conferences, and relevant transdisciplinary and emerging research areas, for higher degree researchers to monitor. Other university or institutional support staff, such as librarians, can offer further support in the use of highly specific information searching tools.

To assist, supervisors can access and use the AIRS modules as a framework for guiding higher degree researchers through the research process. The ability to openly access the online learning resources for the AIRS program under a Creative Commons licence has long aligned with the principles of open education, as supported by reputable educational institutions and research organisations globally. This type of free access means that training providers, such as academic libraries and higher educational institutions, can use and adapt the materials as part of their own programs based on the specific context and institution.

Apply these ideas in your practice

AIRS has shown us that higher degree researchers can develop a stronger skills foundation when partnering with supervisors who actively engage in their progress and encourage them to cultivate relationships with key research support staff. That support network will be different depending on individual higher degree researchers, the supervisors, and the institution. Further, the development of a community of learners engaging with information literacy training at the same time is of added benefit, providing peer learning and support, transdisciplinary networking, and opportunities for collaboration.

As such, developing and maintaining professional relationships with research support and library staff is a way that you can model good networking and collaborative practices. Partnering with colleagues and library staff can help you to introduce research skills training for higher degree researchers. You will see longer term benefits from making time to introduce higher degree researchers to key stakeholders and help them to build their personal learning networks. As a supervisor, you are ideally positioned to explain the value of setting up systems, and using appropriate tools, for managing information to your higher degree researcher. By sharing personal stories of successes and failures, you can demonstrate the importance of

planning and preparing to find, retrieve, evaluate, store, and use information. You can step your higher degree researcher through the approaches you have developed and used for managing literature and other information. This may include a range of analogue and/or digital systems and tools that enable you to effectively record and access your information. There is no one right way in which to do this. What works for one may not work for others. Higher degree researchers will find approaches that work for them, but you can prompt consideration by providing examples of approaches that have worked for you.


A key benefit of supervising is what you can also learn from your higher degree researcher. As they progress through their research journey, they will be exposed to the latest tools, practices, and services that take advantage of emerging technologies. As a supervisor, you can access the AIRS units for your own professional development. Working through the AIRS modules on an annual basis may be a useful practice. Where available, you can attend advanced training sessions hosted by your library. Researchers can also benefit from training provided by vendors on their databases or other subscription information resources that may be hosted by institutional libraries. There are a range of openly available training resources, such as AIRS, that focus on finding and evaluating information through an open (e.g., Creative Commons) license, that can be freely reused and adapted for teaching and research purposes.

Evidence your practice

One way to demonstrate supervisory capabilities is by emphasising your awareness of the value of advanced information literacy. Additionally, you can implement proactive strategies and model a commitment to supporting higher degree researchers to both develop these skills and seek assistance from relevant experts when required.

An inclusive approach can ensure you gain access to the wealth of knowledge and experience available from fellow supervisors and other research support experts. Knowledge-sharing between supervisors and higher degree researchers can create pathways to further training options and support services that can enhance the effective use of information for research. By using and adapting existing resources and tools, you can positively contribute to shaping the information literacy of your higher degree researchers, resulting in improved research outcomes.

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11. EMPOWERING HIGHER DEGREE RESEARCHERS' CAREER PLANNING

Alan McAlpine

Why read this chapter?

From this chapter you will learn:

- to best support the future career needs of your higher degree research (HDR) students
- about frameworks/theories that describe career development
- to have a conversation in a student-centred way
- to help your students broaden their possible future opportunities.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentsupervisors/?p=116>

As supervisors, chances are that the majority of your career has been primarily in an academic role. You may view your purpose as supervisors to encourage, educate, and train the next wave of career academics. This is an admirable goal and a very important part of your role. However, the reality is that your higher degree researchers (despite their current desires) may not become academics; indeed, the statistics show (see Table 11.1) that more will end up in non-academic roles. Many will secure opportunities in industry (indeed they may have come from industry and intend to return with their newfound research skills), and some may even venture into producing start-up ventures. Others may end up working in local, state, or federal government jobs utilising the strong critical thinking skills they have acquired. A number will end up in roles that have nothing to do with the discipline for which they are currently being trained. As supervisors and mentors to higher degree researchers, you can open their eyes to the multiple pathways (which include academic roles) that a research degree can provide. However, this does not mean you need to have, or provide, all the answers. You can enable higher degree researchers to use their current studies as the stepping stone to whatever future they desire, to keep them motivated through research degree studies,

and to use challenges as opportunities for skills development and rely upon and use to become independent researchers pursuing career futures.

Table 11.1. Analysis of the QILT national GOS data file 2016-2022

Year	HDR grads in employment	HDR Grads employed in higher ed	% HDR Grads employed in higher ed
2018	5163	2413	47%
2019	5278	2416	46%
2020	5238	2609	50%
2021	4827	2323	48%
2022	5045	2309	46%
Total	25551	12070	47%

This chapter offers some tips and techniques for supervisors working with higher degree researchers on empowering them to find their own pathways and to value the role of their studies in progressing their future careers. These ideas can have relevance for higher degree researchers, and early career researchers working with supervisors as they seek to pursue career futures.

The higher education sector has encountered a huge increase in the number of students undertaking research degrees and increases in academic roles have not kept pace... this should not discourage the higher forms of formal education. Doctoral completions are good for our economy as a whole and offer higher degree researchers' multiple options and pathways (Casey, 2009). We have invested in their education, why would we not invest in their future? It will pay back dividends to society as a whole.

Career development – What is it and why is it important?

The majority of us have careers and so we may believe we are experts in career development. This statement may only be partly true. We often believe that our experience is the only experience; however, if we have a conversation with our networks, we will find that all our experiences are unique.

Like any other skill or attribute, if we can access tools, develop techniques, and practice these skills we can become more accomplished in their use. At a basic level some of the key features of career development are:

- Understanding self, skills, and qualities.
- A career comprises everything we do, not just paid employment.
- Understanding the job market (in and beyond the current field of study).
- Developing job searching strategies.

- Building networks and connections.
- Seeking out mentors.

So, in a certain way of thinking about it, Career Development is a process. As supervisors, your role is not to provide the answers or assume you know what the future direction of your higher degree researchers will be (you may have a view), but to support them in applying the process. Supervisors can be a starting point for higher degree researchers in building networks and as their mentors. One of the biggest challenges higher degree researchers may face is that they have become very specialised in their research, and so can struggle to see the big picture. This big picture can help those seeking opportunities outside of their research specialisation or outside of academia.

All of this can provide a strong foundation for higher degree researchers as they begin to navigate the ever-changing world and find their career pathway.

The world of work in the 21st Century is highly complex and continually evolving. The impact of technology has made the possibilities of work both more exciting and challenging. Many of the jobs that higher degree researchers will take up in the future have possibly not yet even been imagined.

In this VUCA (Volatile, Uncertain, Complex and Ambiguous) world, career resilience has become far more important (Bennis & Nannus, 2007). Lyons et al. (2015) demonstrated the growing importance of career resilience within career development interventions, proposing it as a way of coping with the challenges the new world of work is throwing at us. Thus, it is highly likely that today's higher degree researchers will come across numerous challenges that they are required to overcome. As supervisors, you can, through discussion, support your students to unpack these challenges and help them apply coping and problem-solving skills they are developing to move forward. These experiences and skills will all inform their future career progression.

Career frameworks

In the career world, there is no overarching unifying theory. Numerous theories and frameworks continue to evolve in response to the dynamic world of work. Early in the development of Career Theory, Parsons & Wigtil (1974) showed that individuals could be matched to groups of occupations based upon certain personality traits. While certain parts of this theory still hold true (the personality of a person often will determine what occupational types are attractive to them), the interactions that guide a person in a particular career direction have been shown to be far more complex.

Here I briefly describe a well-known, and commonly referenced/used, framework (Systems Theory Framework) and a theory (Chaos Theory) that I hope can guide and inform supervisor's conversations with higher degree researchers. My intention here is not to create career development experts or advisors but simply to provide and inform some of the practices for working with higher degree researchers to realise their research independence and career direction.

Systems Theory Framework (STF)

The Systems Theory Framework (STF) as outlined by Patton & McMahon (2006) brings together several theories and models of career development. It acknowledges that an individual's life and career choices are influenced by many and varied factors. It puts the individual at the centre of the framework and recognises the interpersonal concepts that can influence that person. It is important to note, at this point, that often in non-Western cultures this may not be the case; in some instances, collectivist cultures, the value of group, community or family is viewed as more important than that of the individual in a decision-making process. It is worth keeping this in mind when working with higher degree researchers from cultural backgrounds that may be different from your own.

The framework includes the influence of external factors in the decisions an individual may make and opportunities available to them, e.g., current socio-economic situation, geographical location, etc. It then considers the influence of past, present, and future experiences, because the importance of certain factors are likely to change over time.

The occurrence of chance also plays a factor in an individual's influences, and, as Chaos theory shows, we can take advantage of this too.

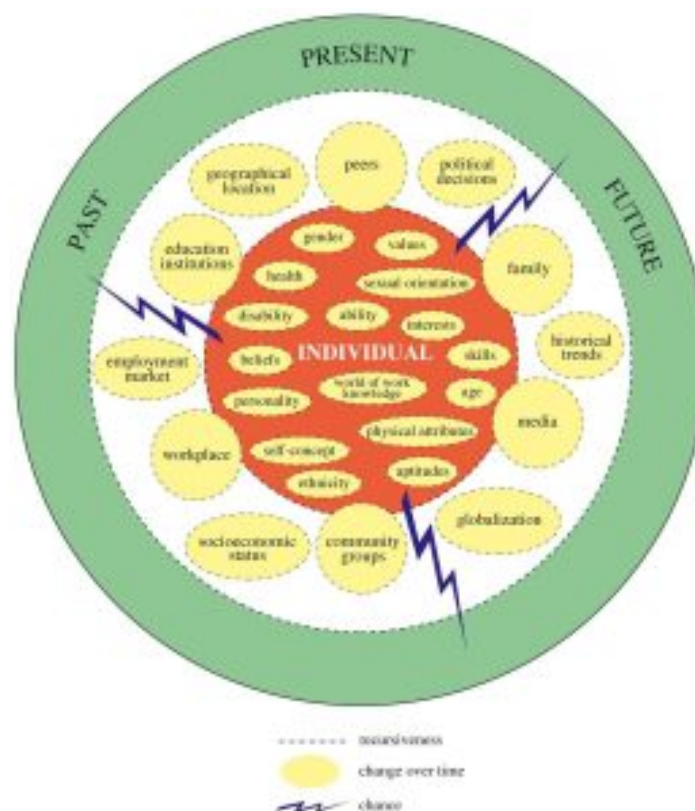


Figure 11.1 Systems Theory Framework by Patton and McMahon. All Rights Reserved. Used with permission

Chaos theory of careers

This theory as outlined by Pryor & Bright (2011) takes account of the fact that we live in a world that is both stable and constantly changing. It recognises that while we cannot control the chance events that occur in our world, we can take proactive actions to take advantage of chance events when they happen. We can still plan.

This theory proposes that trying different things and pushing ourselves outside of our comfort zone helps generate the occurrence of more chance events, and so opportunities. The trick is then to be able to recognise which opportunities fit with our desires, plans, and future aspirations. Self-awareness is everything.

I have introduced two of the many theories in career development. A simple Google search will identify numerous others. The two briefly outlined here provide an overarching framework to support supervisors in conducting career conversations with higher degree researchers. But they need to be applied in a conversational way – you cannot simply provide your higher degree research student with the theories alone.

Your practice

When to have a career conversation

It is never too late, or too early, to have a career conversation with a higher degree researcher. For some individuals a formal, regular conversation might be more appropriate (e.g., once per year, or every 6 months), where there is a date set and expectations are clear prior to the conversation. For other higher degree researchers, ad-hoc, unplanned conversations may arise when supervisors (and possibly they) least expect it. Supervisors need to be well prepared to make the most of both of these opportunities.

The term of a research degree in proportion to the length of a career is very short. With some good and deliberate career conversations, supervisors can set up higher degree researchers with the foundations for the rest of their careers.

How to have a 'narrative' conversation

Narrative Therapy is a counselling technique that puts the individual as the expert in their own lives (Ackerman, 2017). Often supervisors are in a position of power as higher degree researchers come to them for advice. Supervisors can feel pressured to provide all the answers for them. A narrative conversation is one where supervisors can empower higher degree researchers to make decisions based upon their own experiences and expertise based more firmly in the realities of their lives. A narrative conversation seeks to

‘externalise’ the issue at hand and encourages the individual to seek other ‘narratives’ that best describe and deal with the issue or challenge.

This approach seeks to open the conversation up using open questioning techniques and seeks to investigate strengths in the individual to best tackle the challenges presented. The conversation may result in some homework where higher degree researchers apply their practice of going off and conducting research to find ways of tackling the issue at hand that can be discussed later with their supervisors. For example:

Higher Degree Researcher – *“My issue is that this is all too hard. I don’t have the ability to work through this problem and I don’t have the right skills and knowledge.”*

Supervisor – *“So there is a challenge, and you need to find the right tools to help solve it. What tools do you usually rely on when things get tough?”*

The tendency (or the strong desire) to provide solutions can be overwhelming for some supervisors in conversations with higher degree researchers. The narrative conversation does not preclude providing advice or ideas; however, it has to be undertaken in a way that provides choice and empowers higher degree researchers.

Instead of:

“What I suggest you do here is...”

The following may provide alternative approaches to the conversation:

“Have you thought about other ways you might approach this matter?”

“What other ways have you thought about this?”

“I wonder who else you could talk to about this who may have had a similar experience?” (Creates action).

If you did wish to share an example from your own experience, then:

“I found myself in a similar situation and what I did was...” This approach does not ‘tell’ the individual what to do but provides guidance to one possible solution.

Case study

A higher degree researcher approaches a supervisor regarding future opportunities. They are a local higher degree researcher and have recently become aware that the future

research opportunities (in their specialisation) are all overseas. They have close family ties locally, and have no great desire to leave the local area to pursue.

Supervisor – *What interested you in your topic area in the first instance?*

Higher Degree Researcher – *The topic area is of great interest personally, and I was keen to pursue a research degree.*

Supervisor – *Why was the topic of particular personal interest?*

Higher Degree Researcher – *The desire to make a difference in people's lives in my community.*

Supervisor – *That is an admirable motivation. What have you learned about yourself through doing research studies?*

Higher Degree Researcher – *That it can be a long slow process to break new ground, that the impact upon the field can take a while.*

Supervisor – *What skills have you developed in undertaking research?*

Higher Degree Researcher – *patience, persistence, resilience....*

Supervisor – *Where else, locally, could you apply those skills?*

Higher Degree Researcher – *I am not sure?*

Supervisor – *Given your passion for making a difference locally, in your topic area, I wonder where else you could apply those qualities.*

Higher Degree Researcher – *Mmm, not sure. Maybe there are some local businesses I could apply to.*

Supervisor – *True. I wonder who you could chat with first before looking for specific work?*

Higher Degree Researcher – *Yeah. Maybe I could ask my cousins who work in some of those areas?*

Supervisor – *That sounds like a great plan.*

Some useful tips

- Learn and practice how to have a 'narrative' conversation. Ask your colleagues and higher degree researchers to tell their stories.
- Try not to be an advice giver; learn and practice to do this in a way that provides the student with a choice.
- Give the benefit of your experience (it is valuable).
- You cannot be what you cannot see (much used in the equity space, but valid in all – from a careers

perspective, that is seeing the types of roles you would like to engage with or making contacts to build experience or networks).

- The importance of understanding what the student's underlying motivator may be, e.g., perhaps they have had a parent who suffered from a particular ailment, and this is the presenting motivator for undertaking the current research. This is a valid motivator, however there may be other ways to meet this important and inherent need.
- Validate higher degree researchers' thinking.
- For some the motivation to find gainful employment may be the driving force...and that is OK.
- Refer to career experts (your university may/should have a career service – if not, there are plenty of resources to be found online).

Mentoring and networking

The use of mentors from industry and broader disciplinary networks to build effective networks is an extremely useful way of helping higher degree researchers. Mentors can provide other voices into the career conversation as well as links to opportunities that higher degree researchers may not yet have considered. Supervisors will have many other networks to offer as well (maybe you haven't considered how wide your own network is – other academics, industry partners, etc.) The often-used catchcry of 'It's not what you know but who you know' holds some truth but is only partly correct. It is both "what you know" and "who you know" that is important. The creation of networks, both large and small, feeds into the Chaos Theory model mentioned earlier, and opens both untapped and unimagined opportunities. As supervisors, you can show higher degree researchers how to leverage contacts to develop new networks and mentors. It is important that higher degree researchers learn to engage with new contacts, rather than supervisors directly handing them over to possible contacts. Building higher degree researchers' abilities and confidence in proactively reaching out is another valuable skill for them to develop. Encouraging higher degree researchers to join student clubs and professional associations will also help them to develop skills and build their network. Supervisors can monitor the success, or otherwise, of higher degree researchers in making a connection and this can be monitored during career conversations.

Applying this to your practice

Now is your opportunity to practice some of the techniques:


- Arrange a Career Conversation with one of your higher degree researchers.
- Prepare by setting out some broad questions to help guide your thoughts in the conversation.
- Consider some questions that allow the higher degree researcher to understand what may be influencing their decision-making process (influencers). Ask them to decide on at least one action to take.
- Take time to reflect on the conversation afterwards:

- What appeared to work well?
- What might you choose to change?
- What in particular did you notice about the higher degree researcher's story?
- Did it fit with any particular framework introduced here?
- What, if any, were the particular motivations or influencers on the higher degree researcher's decision(s)?
- Arrange a follow up conversation and hear about what happened with any agreed actions.

Conclusion


This chapter has been written to provide supervisors with practices in supporting higher degree researchers in pursuing future careers. The world of work is rapidly changing and the many and varied opportunities that they have before them can be overwhelming, some of which we probably haven't even as-yet imagined. Supervisors are supporting the best and brightest in our community – higher degree researchers are the most highly educated cohorts in our country and world. These frameworks and approaches are intended to help supervisors to provide the best support they can to succeed in their future careers.

Additional Resources

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

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12. BUILDING RESEARCH INTEGRITY

Helen Titchener and Bronwyn Greene

Why read this chapter?

The supervisory relationship is at the heart of an emerging researcher's grounding in the responsible, ethical conduct of research. It is largely through their relationship with you, the supervisor, that a higher degree researcher learns what it means to conduct their research with integrity. While the responsibility for modelling exemplary conduct rests with the entire scientific community, it is the supervisor who is in the key position to mentor the higher degree researcher and ensure they have an appropriate and robust grounding in both the conduct of their research and in their own conduct as researchers.



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Introduction

Challenges around matters of integrity will arise throughout a candidature and you should aim to identify and resolve them promptly; both as a teaching opportunity and in order to avoid the development of inappropriate practices that can become rooted in your higher degree researchers' ways of operating as future researchers.

Rules and guidelines around **research integrity** and codes of conduct may seem bureaucratic or irrelevant to your supervisory practice. Unfortunately, if you do not establish shared protocols around the candidature, the research and your supervisory relationship, when something does go wrong, or when one party calls into question the actions of another, it can be very difficult to sort out what has happened and find a way forward.

This chapter summarises the principles of research integrity and presents tools that you and your higher degree researchers can adopt to ensure that everyone has a clear understanding of their rights and responsibilities as the various elements of the research project unfold.

Structure of the chapter

The chapter is presented in two parts.

Part One outlines definitions, meanings and resources relating to research integrity that are available to help you and your higher degree researchers understand:

- The meaning of research integrity and how it differs from research ethics
- International principles of research integrity
- National and institutional resources.

Part Two provides some tools that you can use to help you embed matters of research integrity into your ongoing supervisory practice.

Part one

Definitions and meanings

What is research integrity and how does it differ from research ethics?

In general terms, research integrity relates to the principles and standards that promote honesty, transparency, and reliability throughout the research process. It involves the responsible conduct of research, which includes the design, execution, analysis, and dissemination of findings. Research integrity requires researchers to uphold the fundamental values of honesty, accuracy, fairness, and accountability. It emphasises the importance of maintaining intellectual honesty, avoiding conflicts of interest, and ensuring the reproducibility and reliability of research outcomes.

In academic contexts, research integrity involves upholding the norms and practices of the scholarly community. This includes appropriately citing and referencing the work of others, respecting intellectual property rights, and avoiding plagiarism. Research integrity also encompasses the responsible use of research funds and resources, the appropriate handling and reporting of data, and the commitment to the principles of confidentiality and privacy.

Research ethics, on the other hand, focuses on the moral principles and guidelines that govern the

treatment of human subjects and the use of animals in research. It involves the ethical considerations and decision-making processes associated with conducting research involving living beings. Research ethics aims to protect the rights, welfare, and dignity of individuals or groups participating in research studies.

Ethical research practices require obtaining informed consent from participants, ensuring voluntary participation, protecting confidentiality, and minimising any potential harm or risks. Researchers must also consider issues of equity, justice, and fairness when recruiting participants and conducting research. Additionally, research ethics entails maintaining the privacy and confidentiality of research subjects, and handling sensitive data with care and respect.

Although research integrity and research ethics share common principles, they differ in scope and focus. Research integrity pertains to the broader spectrum of research practices, extending beyond the treatment of subjects to encompass all aspects of responsible research conduct. Both concepts are crucial in upholding the highest standards of conduct in research.

Resources around the principles of research integrity

There are a number of resources that you may find helpful to use in discussions framing your supervisor/candidature agreements (see also Part Two).

The Singapore Statement

The *Singapore Statement on Research Integrity* (available under CC BY 4.0) forms the basis of most national and institutional research integrity frameworks and is a useful starting point for discussions with your higher degree researchers.

The Statement, included below, was developed in 2010 as an international effort to promote greater research integrity worldwide, and to foster a common approach to the fundamental aspects of the responsible conduct of research.

The Statement is based on the four principles of honesty, accountability, professional courtesy and fairness, and good stewardship, and sets out 14 key responsibilities that are fundamental to maintaining these principles in the conduct of research.

Australian code for the responsible conduct of research

In Australia, matters of research integrity are governed by the principles of responsible research conduct as established in the Australian Code for Responsible Conduct of Research 2018 (the Australian Code). The code was co-authored by the Australian Research Council (ARC), The National Health and Medical Research Council (NHMRC), and Universities Australia. The principles of the code are:

- Honesty and rigour in the development, undertaking and reporting of research
- Transparency in declaring and managing conflicts of interest and in the reporting of research methodology, data and findings
- Fairness in the treatment of others
- Respect for research participants, the wider community, animals, and the environment
- Recognition of the right of Aboriginal and Torres Strait Islander peoples to be engaged in research that affects or is of particular significance to them
- Accountability for the development, undertaking, and reporting of research
- Promotion of responsible research practices.

The Code is supported by a number of short and accessible guides that expand on various topics that are likely to arise throughout the candidature lifecycle. Topics of the guides are *authorship*, *collaborative research*, *conflicts of interest*, *managing breaches of the Code*, *management of data*, *peer review*, *publication*, *supervision*, and *the role of research integrity advisors*. Each guide outlines the responsibilities of both institutions and researchers in these particular areas. A useful way of ensuring that your higher degree researchers understand their obligations in each facet of their research journey would be to schedule a discussion of these key topics at relevant times during candidature and use the guideline as a basis for your conversations.

Other national resources

Many other countries have developed their own sets of principles and resources. The following list is not exhaustive but may be a helpful starting point for those of you who are based outside Australia.

European Science Foundation	Fostering Research Integrity in Europe
All European Academies (ALLEA)	The European Code of Conduct for Research Integrity
Research Council of the United Kingdom	Policy and Guidelines on Governance of Good Research Conduct
Council of Canadian Academies	Honesty, Accountability and Trust: Fostering Research Integrity in Canada
Office of Research Integrity, USA	Multiple resources

Institutional requirements and resources

Your own institution will have research integrity policies, procedures and guidelines. These are designed to provide you with as much specific information as possible to help guide your practice as both a researcher and supervisor.

At the highest level:

- *Policies* provide the must-dos; they are the legal position of your institution
- *Procedures* set out the *actions* and processes that should be undertaken
- *Guidelines* provide a plain English version of the key points from the policy and procedure documents.

In addition to any specific research integrity policy documents, your institution may also have *Codes of Conduct* for both staff and students.

When questions are raised or allegations are made around the actions of a higher degree researcher, or a supervisor, these documents are used to establish whether a breach has occurred and what course of action is appropriate. In many institutions, you will find *Research Integrity Officers* who are available to assist you with any questions you have and to manage allegations of breaches of integrity.

Other institutional resources available to you and your higher degree researchers may be provided through your library or dedicated research training unit. Here you are likely to find a raft of training resources around all facets of research integrity and ethics. Note that some of these may form a mandatory component of the candidature, while others will be available to tap into on an as-needed basis.

The Singapore Statement

Preamble

The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

Principles

- Honesty in all aspects of research
- Accountability in the conduct of research
- Professional courtesy and fairness in working with others
- Good stewardship of research on behalf of others

Responsibilities

1. Integrity: Researchers should take responsibility for the trustworthiness of their research.
2. Adherence to Regulations: Researchers should be aware of and adhere to regulations and policies related to research.

3. **Research Methods:** Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively.
4. **Research Records:** Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others.
5. **Research Findings:** Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.
6. **Authorship:** Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.
7. **Publication Acknowledgement:** Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria.
8. **Peer Review:** Researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work.
9. **Conflict of Interest:** Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as in all review activities.
10. **Public Communication:** Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views.
11. **Reporting Irresponsible Research Practices:** Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods.
12. **Responding to Irresponsible Research Practices:** Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of misconduct and other irresponsible research practices and for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record.
13. **Research Environments:** Research institutions should create and sustain environments

that encourage integrity through education, clear policies, and reasonable standards for advancement while fostering work environments that support research integrity.

14. Societal Considerations: Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.

Part two

This section presents you with some tools that you can use to help you embed matters of research integrity into your ongoing supervisory practice.

Supervisory agreement

Even if your institution does not mandate it, it is good practice to develop a supervision agreement with your higher degree researchers in the first weeks of candidature. The agreement should define the goals, roles, rights and responsibilities of all parties including the higher degree researcher and all members of the supervisory team.

In Australia, the NHMRC guideline on how supervision of research degree candidates supports the responsible conduct of research (National Health and Medical Research Council, 2019) provides the following points of guidance:

- Supervisors must work cooperatively with those whom they supervise, and with any co-supervisors, to establish and maintain an appropriate level of engagement.
- Supervisors and those whom they supervise should agree, in writing, on:
 - Expectations related to progression and development
 - The appropriate level of oversight of the development and conduct of the research
 - Expectations related to work product or deliverables, if relevant
 - Expectations related to the involvement of the supervisor in the work of the individual/s under supervision, or vice versa, if relevant
 - Arrangements related to any planned co-authorship
 - Any necessary training for the individual/s under supervision
 - The frequency and format of meetings
 - Expectations related to contact between meetings
 - The nature and format of feedback

- How any disputes will be resolved
- When and how the agreement will be reviewed during the supervisory relationship.
- Where remote supervision is provided, supervisors should ensure that the individual/s being supervised are not disadvantaged because of these arrangements and should consider the use of appropriate technology.

Other issues to consider in constructing your agreements might include the following:

- How the supervisory team will operate, clearly outlining roles and responsibilities of all members, both supervisors and the graduate researcher. This is a helpful reference when difficulties or conflicts arise.
- When draft texts are to be submitted, read, and discussed, and by which member(s) of the team,
- Which members of the team should be involved in the analysis and interpretation of the data, who holds rights to the data, and how they should be stored,
- How to ensure that your higher degree researchers have adequate time and opportunity to engage in additional training around research integrity matters,
- How to ensure that all members of the team have current knowledge of the institution's research integrity policies and resources, including around emerging areas such as the use of generative artificial intelligence.

Research integrity checklist for higher degree research supervisors

The following checklist is provided to help summarise all the points raised above and provide you with a quick-access tool that you can use to help ensure you have considered and integrated those issues into your supervisory practice.

Communicate

- **Continuously communicate research integrity expectations:** Clearly communicate the importance of the responsible conduct of research...not just once, but throughout their candidature. This should include clearly articulating the research integrity principles and guidelines they are expected to follow throughout their candidature and beyond.
- **Embed responsible research practices into everyday practice:** Encourage your higher degree research students to adopt responsible research practices, such as accurate data collection and record-keeping, rigorous analysis, and transparent reporting of results.
- **Encourage a culture of research integrity:** Foster a culture of research integrity within your research group and institution. Encourage collaboration, respect, and open communication among researchers. Promote discussions on research integrity and ethics to facilitate learning and awareness.

Offer mentorship and support by being available to openly address their concerns and provide guidance on ethical decision-making.

Build knowledge

- **Know your research integrity policies:** Review your national research integrity code/institution's research integrity policies and guidelines to ensure you have a clear understanding of the expectations and standards for research integrity. If there isn't a national code or institutional one, the Singapore Statement is a good starting point.
- **Provide training on research integrity:** Ensure that your higher degree researchers receive appropriate training on research integrity and the responsible conduct of research. This may include any institutional workshops, seminars, or online modules, but you should also share with them relevant literature that promotes responsible conduct of research.
- **Stay updated and seek guidance:** Stay informed about research integrity. Stay updated with relevant research integrity guidelines, policies, and best practices. Seek guidance from institutional research integrity advisors.

Manage misconduct

- **Address plagiarism and intellectual property:** Higher degree researchers should already know what plagiarism is by now. Talk to them about plagiarism, intellectual property rights, and proper citation practices. Emphasise the importance of attributing ideas and other work appropriately and seeking permission when necessary, especially copyright permission.
- **Monitor and address research misconduct:** Be vigilant in monitoring your higher degree research students' work, and promptly address any signs of research misconduct, such as fabrication, falsification, or plagiarism. Educate your students about the consequences of research misconduct and the potential impact on their academic and professional careers.

Foster good practice

- **Ensure ethical treatment of humans, animals and the environment:** If the research involves human subjects, ensure that your higher degree research students understand the principles of informed consent, privacy, confidentiality, and the ethical treatment of participants. If the research involves animals, ensure that your student understands the importance of the ethical, humane, and responsible care and use of animals in research. Guide them in obtaining the necessary approvals before commencing any research involving human subjects or animals, or any other research requiring permits or approvals.
- **Good data management and sharing is good research:** Encourage good data management practices, including proper storage, backup, and organisation of research data. Check to see that the student has indeed appropriately stored and managed their data. Have you seen it? Do you know

where it is? Discuss the importance of data sharing and archiving, while also considering confidentiality and data protection issues.

- **Encourage open and transparent research:** Encourage higher degree researchers to share their research findings openly and honestly. Promote the principles of pre-registration, data sharing, and open access publishing, where applicable and ethically appropriate.
- **Disclose and manage conflicts of interest:** Ensure that your higher degree researchers understand what constitutes a conflict of interest and how to identify and manage such conflicts. Discuss the importance of disclosing any potential conflicts of interest that may arise during the research process, including in peer review.
- **Promote responsible authorship and publication:** discuss and agree on responsible authorship practices with your higher degree researchers, including understanding authorship criteria and order, acknowledging contributions appropriately, where and how outputs will be published, and publication ethics. Help them understand the importance of avoiding predatory publishers, duplicate publication, and salami slicing (where one project is “sliced” into smaller pieces for multiple publications), and ensure that they understand the importance of properly disclosing conflicts of interest.
- **Discuss dealing with unexpected results:** help your higher degree researchers to understand appropriate ways of understanding negative research results; reporting them appropriately and framing them as opportunities for learning not failure.


Display leadership

- **Lead by example:** as an HDR supervisor, your students will learn from you and they will model the behaviours that they observe. Walk the talk and ensure that you engage in the responsible conduct of research at all times. Your actions as a supervisor will carry more weight than your words.

Conclusion

Hopefully, the issues and resources presented above will have reinforced the need to ensure that matters of research integrity are woven into the candidature from the earliest days and that this chapter has provided some resources and tools to help you achieve that aim. When this is done well, integrity becomes part of the fabric of the candidature that helps to build and maintain both strong supervisory relationships and future researchers who embrace the four principles outlined in the Singapore Statement – honesty, accountability, professional courtesy and fairness, and good stewardship of research.

References

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

National Health and Medical Research Council. (2019). *Guidance to support the code: Supervision*.
<https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018#download>

13. SUPERVISING FOR SOCIETAL IMPACT: A HOLISTIC APPROACH TO HIGHER DEGREE BY RESEARCH SUPPORT

Wade Kelly and Lisa M. Given

Why read this chapter?

Universities, governments, and funders are increasingly asking researchers to articulate how their work will produce a positive impact on society. Yet, many supervisors (and their higher degree researchers) have not been trained to communicate their work beyond academe, or to consider how their research can contribute to both immediate and longer-term societal change, beyond the scholarly contributions of their research. This societal impact imperative requires new approaches to the supervision of higher degree researchers, to best position them for future success. This chapter explores how to move beyond considerations related to preparation for thesis-related research work, to adopt a holistic approach to supervision that prepares higher degree researchers for societal impact work. Whether higher degree researchers wish to pursue careers in academe, or in industry, government, or community settings, embedding external engagement and impact-related skills throughout the journey will position them for success.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://jcu.pressbooks.pub/confidentsupervisors/?p=302>

Introduction

We have all heard horror stories of poor research supervision; those supervisors who only met with their higher degree researchers during milestone meetings refused to provide feedback on writing, furnished no

introductions, made no connections, and provided no encouragement. Sadly, the list of poor supervision stories is long and, occasionally, dark. Graduate supervision is a critical aspect of the academic mentoring process that should extend far beyond the context of providing support for thesis development but, too often, does not.

The core of the problem may be attributed to a lack of communication about and preparation for the responsibilities of supervisors. Supervisory training is increasingly common for new academics, but even seasoned supervisors need guidance to respond to particular situations and challenges their higher degree researchers may face. Professional development and mentoring beyond early career training is limited. This leaves too many supervisors to replicate their own (often poor) supervisory experiences and fail to adapt to rapid and ongoing changes in higher education. The higher degree experience of ten years ago is not the higher degree experience of today. The job market and the sector are different, and the skills required to flourish must evolve.

While this chapter focuses on preparing higher degree researchers for generation of societal impact, in their future work, the approach we advocate will also enable you to respond to other, new changes in the graduate experience by adopting a holistic style of supervision. That is, we look at the higher degree researcher as a whole person and address how best to support your higher degree researchers for success based on their desires and career aspirations. The thesis is an artefact; the higher degree is a future. To prepare higher degree researchers for their future, an evolving dialogue throughout the higher degree journey will focus on their activities, skills, knowledge, connections, and potential to generate societal impact, which will serve them well beyond graduation.

As researchers transition from their higher degrees into practice environments, they need to understand how to meaningfully engage beyond academe. In this chapter, we explore the significance of supervising for societal impact and discuss strategies to integrate this approach into graduate research programs.

The research landscape

The landscape of higher education is changing rapidly. Funders are increasingly requiring researchers to respond to specific requirements aimed at generating impact in their communities, with industry, or with government, throughout the research process. In this chapter, we refer to this as societal impact work to distinguish it from the scholarly impact of research (e.g., h-index and citations). Many funders now include societal impact statements as part of the application process; and universities have responded by offering sessions to higher degree researchers on crafting these statements for thesis work. However, to prepare higher degree researchers appropriately, we must move beyond instruction in the genre of writing impact statements, to fully embrace a societal impact mindset.

A good (societal) impact statement is the icing on the (research) cake. Funders are moving from asking about the icing to critically questioning how the cake was made, who was involved in making it, where the

ingredients were sourced, how big the slices are, who is getting a piece, how it is being delivered, the costs involved, and whether a cake is the correct end-product, at all. Calls for co-design of research problems, participatory methods, co-production of solutions, and co-funding of research activities, position external beneficiaries of university research at the heart of the enterprise. Supervisors must prepare their higher degree researchers for this new world, which reaches far beyond where a thesis-as-cake will take them.

Where thesis supervisors may once have been able to focus purely on research outcomes to support higher degree researcher success, contemporary career paths require more diverse preparation for post-graduation career success. Supervisors need to be aware of the changes happening beneath their feet in the higher education landscape to set up higher degree researchers for research success *and* to prepare them for the emerging societal impact reality in universities, government, and industry. Conversations and experiences regarding publishing, scholarships, and awards remain important, but supervisors must also consider how best to foster success for future impact generation throughout the higher degree.

Supervision for Societal Impact Ecosystem (SSIE) Framework

The Supervision for Societal Impact Ecosystem (SSIE) is a practical framework that explores the potential pathway from community engagement to impact within the context of higher degree research preparation. The sections that follow provide background on various dimensions of the framework; we argue that being exposed to societal impact-related thinking and approaches in terms of presentation, writing, research design and funding, are critical to embed an impact mindset and to develop higher degree researchers' societal impact-related skills.

The framework (see Figure 13.1) is a starting point for supervision, rather than an end point. The diagram is intended to foster discussion and exploration between higher degree researchers and supervisors and can be revisited throughout the program. Practically, it can be adopted as a mapping tool to address higher degree expectations and needs, and to track researchers' progress across domains.

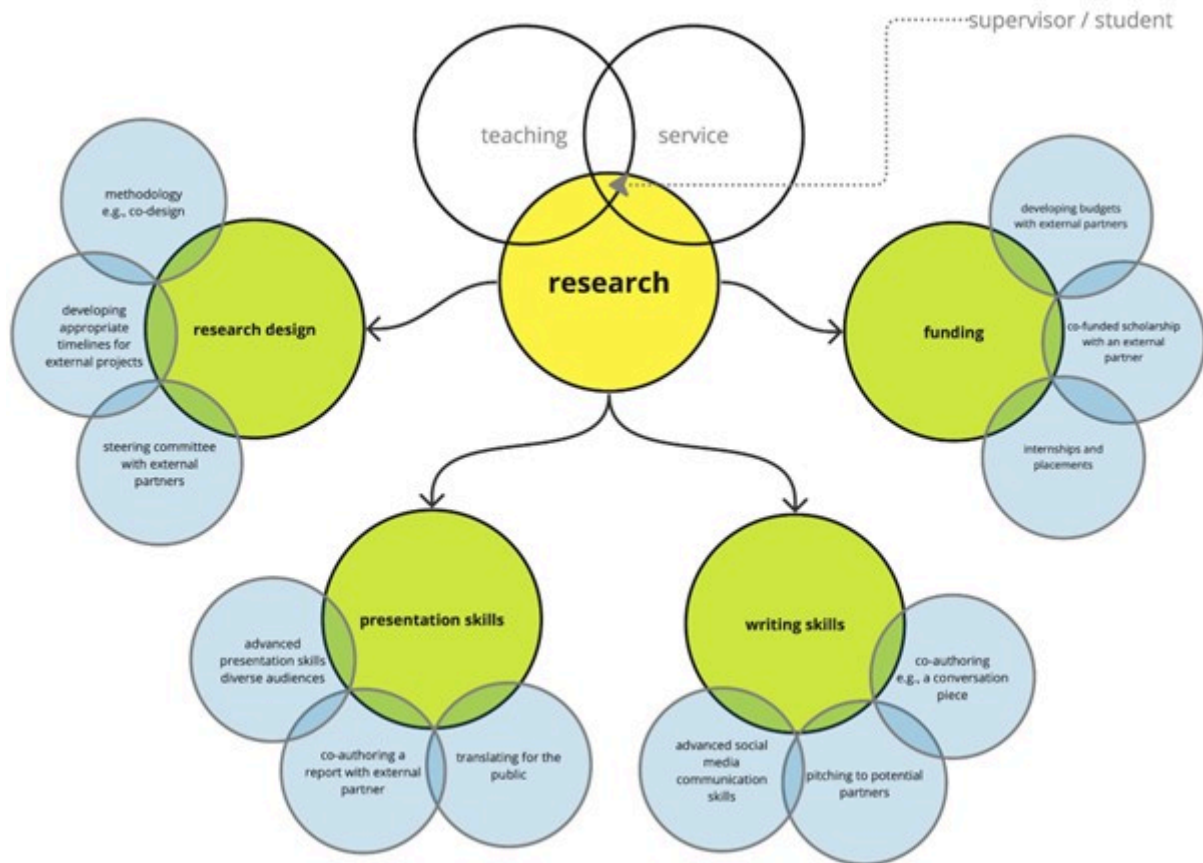


Figure 13.1 Supervision for Societal Impact Ecosystem by Lisa Given and Wade Kelly, used under a CC BY-NC-ND 4.0 licence

A holistic approach to research “training”

The thesis artefact (whether in manuscript form, or as a collection of published papers) remains the primary end-product of the higher degree process. It is little wonder, then, that higher degree researchers and supervisors often focus on the conceptual, theoretical, and technical aspects of research, such as methodological design, project planning, and data analysis. These are critical to research success and, typically, involve new areas of investigation and work for higher degree researchers. Yet, some supervisors encourage higher degree researchers to focus primarily (or only) on thesis-related work, while neglecting the broader research ecosystem and its implications for higher degree researchers’ futures. Higher degree preparation must also address future career paths, which may be uncertain or precarious, whether inside universities or beyond. Higher degree researchers must gain experience communicating and working with potential beneficiaries of their research, outside of the academy.

Supervisors can adopt holistic approaches to research training irrespective of higher degree researchers’ anticipated career trajectories, in academia, government, community, or industry. Effective supervision means expanding the conversation scope with higher degree researchers beyond the confines of the thesis (as also discussed in the chapter on “careers” in this volume). A higher degree is not solely about completing a thesis; it encompasses a spectrum of experiences and opportunities for holistic career development. By

acknowledging and building on higher degree researchers' previous experiences, supervisors can create a supportive and inclusive learning environment. This entails considering the whole person by engaging in mentoring conversations that extend into the higher degree researcher's past (drawing on previous experience), acknowledging their present (current goals and expectations), and projecting into their future (where they want to go, post-graduation, and what skills they need to get there). All stages of this conversation should include discussions of the potential societal impact they wish to generate across their career.

This approach revolves around developing a comprehensive understanding of higher degree researchers' potential career trajectories and strategically embedding activities throughout the higher degree program to develop a wide complement of skills. For example, higher degree researchers should be exposed to budgeting, ethics, stakeholder engagement, writing and presenting for non-academic audiences, policy development work, pitching to industry funders and philanthropists, and other crucial skills and experiences required to understand and deliver societal impact from research.

The following sections explore various dimensions of the "engagement to impact" continuum and provide possible approaches for supervisors to take in supporting higher degree researchers in skill acquisition and development related to this work.

Modelling an impact mindset from day one

In the first year of the higher degree, supervisors should emphasise the importance of considering potential societal impact of the proposed research during the project scoping phase. Among other considerations, this could include designing needs assessments, exploring ethical considerations, and planning to share research findings with relevant stakeholders. While not all higher degree researchers can design a study with direct involvement of an external partner or anticipate where their research will have an immediate impact, exploring what might be possible within the constraints of the higher degree should be encouraged. Many higher degree researchers may have pre-existing relationships with community organisations, for example, which could become potential sites for data collection and for addressing an organisation's needs. Other higher degree researchers may need to learn strategies for building connections with potential research partners, which could be pursued after graduation. This is an apt opportunity to discuss the nature of relationship building, including what equitable partnering looks like, as well as the logistics involved in contracting processes, in ethics review, and in co-authoring publications with partners. Collaborating with external partners can amplify the reach and relevance of higher degree researchers' projects, but it must be done with reciprocity and trust, and appropriate to the higher degree researchers' individual needs and circumstances.

Supervisors play a vital role in preparing higher degree researchers to understand the potential impact of their research. By exploring different methodologies and emphasising the translation of research findings into practical outcomes, supervisors can empower higher degree researchers to plan for, evaluate, and report the societal relevance of their work. This approach ensures that higher degree researchers view the

higher degree as an opportunity to make contributions to their field, as well as to the collective good of society, by planning ahead for impact-related work.

For those higher degree researchers who may not be able to engage with external stakeholders during the degree, conversations can still be had about ethical practices, whether it be around sustainability and waste in medical research, reduction of animal models in biological research, or strategies for engaging with government policymakers. All of these are contemporary issues in higher education related to societal impact.

For those higher degree researchers with ready access to potential partners, stakeholder engagement throughout the research process is crucial for research to have an impact. Supervisors can help higher degree researchers to identify potential partners using stakeholder mapping processes, to communicate appropriately with stakeholders, and to involve partners in co-design and co-production processes.

Supervisors can also explore the potential for industry and community partners to be involved in formal co-supervision of the research. This is done as part of the formal contracting process between the university and the partner organisation and needs to be managed by Principal Supervisors on behalf of their higher degree researchers. Of course, external partners will likely need mentoring and support in the supervision role, which can be provided by both academic supervisors and the university's graduate research office.

Modelling a holistic approach: What it means to be an academic

The routines and expectations embedded within early levels of education — from K-12 to the undergraduate experience — often require disruption and unsettling. The higher degree is not — at least, it should not be — as highly prescribed as previous educational experiences. Supervisors are not bosses, friends, coaches, or teachers. Supervisors are guides; the higher degree researchers are apprentices. This relationship can be confronting to higher degree researchers who have come to expect rote learning and highly structured processes and outcomes. Supervisors share the breadth of their roles and responsibilities, and discuss local and global socio-political constraints, providing a clearer picture of what the academic experience entails. Engaging for impact necessitates supervisors address several key areas during their conversations and interactions with higher degree researchers, ensuring they are exposed to a range of experiences to shape their understanding. A diversity of experiences also provides opportunities for higher degree researchers to determine what skills they wish to use (or not use) in future.

Sheltering higher degree researchers from service opportunities (such as committee work, for example), may mean the thesis is completed more quickly, but it comes at a cost. Being able to develop a higher degree researcher's concept of an academic trajectory starts with a conversation about the nature of higher education and the roles and responsibilities contained within it. Sitting on a university-level committee, serving as a peer reviewer for conference presentations, or joining a disciplinary awards committee are experiences that can help higher degree researchers to grow their skills and extend their professional

networks. Discussing these experiences with supervisors can support higher degree researchers to critically reflect on their skill profiles and identify areas for further growth. The engagement skills relating to systems thinking, governance structures, committee processes, and even how to challenge senior colleagues and advocate for your needs, can all be learned through service within the academy and the broader discipline. While these skills can be acquired in an academic context, they are not limited to it; such skills are highly valued within, and transferable to, industry, government, non-profit organisations, and other contexts outside of the academy.

The development of impact skills can be fostered across various other dimensions of the higher degree. Most supervisors have teaching, research, and service responsibilities, yet the experience for many higher degree researchers is limited to the research realm. In addition to research and academic service opportunities, supervisors should consider how they can promote engagement for impact through teaching and community-based service activities. Planning for sessional teaching opportunities from the outset of the higher degree helps the higher degree researcher to plan their research time, accordingly, while also helping the academic unit to plan for future workforce needs. Sitting on a non-profit organisation's working committee can help higher degree researchers gain critical insights into the challenges and benefits faced in the community while providing the non-profit organisation with expert advice and a pathway for broader engagement within the university. Higher degree researchers can also undertake industry placements, service learning, or contribute to campus-based science camps for K-12 schools, to gain relevant experience.

Engaging in conversations about the nature of higher education, global trends in the sector, and political forces shaping research and teaching priorities, are important for researcher development. Some higher degree researchers will move overseas; many will hold a series of different, short-term roles, while they look for permanent work; and others will juggle caring responsibilities alongside higher degree completion and the transition to work. Their thinking must extend beyond the local culture and the immediate future. Supervisors should encourage higher degree researchers to lift their heads up, look around them, and understand what is happening in their departments, schools, faculties, and in their cities, states, countries, and globally. This will help them to see their place in the world and anticipate where they can contribute, in future. Understanding the internal and external forces that shape universities will help researchers in navigating a post-doctoral life.

In the context of societal impact, this conversation may be shaped by sharing relevant contemporary articles on higher education and impact. It may include reviewing granting requirements from various funders or discussing how changes in policies in other countries can put pressure on local institutions to adjust their practices.

A good starting point for discussing higher education is to consider the meaning and intention behind the social contract between universities and society. There is no single answer to this question, but many higher degree researchers have never considered this issue. Why do we do what we do at universities?

What is our social responsibility to the environment, people, heritage, or the economy? Given rising dis/misinformation, what role do universities have in fostering expertise and knowledge sharing?

Conversations will likely take different forms for those in applied, professional, theoretical, and creative practice disciplines. Yet this is a core part of building an understanding of the discipline and how it relates to others, of the broader sector, and of emerging pressures and expectations that shape how each discipline evolves. As much societal impact work embeds transdisciplinary thinking and experiences (i.e., where interdisciplinary research embeds stakeholder interaction and benefit), extending higher degree researchers' understandings of what academic work looks like within this context is paramount for future research and impact work.

Communicating for societal impact

In any job, communication skills are vitally important. Historically, academic programs prepared higher degree researchers to communicate with people who think and behave in similar ways to them — other academics. If societal impact is the destination, engagement outside of academe must be part of the journey. Being able to communicate with a wide range of audiences, in various sectors, is an increasingly valuable skill. This takes many forms, including science communication, knowledge mobilisation, mass media engagement, social media postings, public presentations, funding pitches, policy briefings, translating research for practice change, and much more. The following sections address writing and presenting skills, as these are the most common (and most overlooked) strategies for engaging beyond academe. The communication continuum extends beyond these areas, and supervisors would do well to consider how interpersonal skills are being fostered, as well.

Writing skills

Writing the thesis allows higher degree researchers to hone their academic voices and learn disciplinary expectations for scholarly publishing. Higher degree researchers absorb what they see modelled in journal articles, conference papers, book manuscripts, and other sources of academic writing to inform the thesis style. Through an acculturation process, higher degree researchers begin to perform in ways that are consistent with the established norms of their disciplines. Increasingly, higher degree researchers are engaging in interdisciplinary research and are publishing articles and book chapters alongside (or as part of) the thesis itself.

Supervisors can provide advice on solo publishing, but they can also serve as co-authors on higher degree researchers' publications; in this way, supervisors can model and support publishing practices that higher degree researchers need to pursue academic careers and to work in industry-based research contexts. Building a track record of publications is also important for scholarship and small grant applications,

and for future career development. Supervisors should take active roles in supporting their higher degree researchers in these endeavours.

Writing for academic peers is a critical component of the higher degree experience; however, developing the ability to write for various audiences, beyond academe, is crucial for the types of engagement work that can lead to societal impact. Unfortunately, this type of writing often receives minimal attention during higher degree studies.

Encouraging higher degree researchers to develop a translational writing voice can take many forms. It starts with supervisors emphasising the value of writing for non-academic audiences and modelling what this style of writing entails. This can include sharing articles in *The Conversation*, blog posts, newspaper articles, artwork, or stories authored by academics from various disciplines. By discussing what elements make for quality pieces (e.g., explaining terms, accounting for jargon, reducing complexity, using metaphors), supervisors can normalise the practices of crafting research outcomes for generalist readers and of establishing a public voice alongside one's academic reputation. Being able to synthesise complexity for various audiences is critically important for getting research outcomes in front of policymakers, community groups, and corporate decision-makers, among other types of non-academic stakeholders.

While academic publications take countless hours, producing public-facing news articles, briefing notes, executive summaries, and trade publication articles based on research outcomes takes much less time. This presents an excellent opportunity for supervisors to co-author these types of publications with higher degree researchers.

When supervising higher degree researchers in science or other disciplines where thesis-by-publication is the norm, co-authoring a piece for *The Conversation* can extend the reach of a newly published work.¹ For higher degree researchers in humanities or social sciences disciplines completing manuscript-style theses, supervisors and higher degree researchers can pitch an article to *The Conversation* to connect research outcomes to a current event or popular culture.² The university's media team can provide training and support for writing for this venue, as well as post-publication profiling of the work.

Higher degree researchers should be encouraged to write for and with non-academic audiences, co-

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1. Here is an example for a thesis publication: Keith, R., Hochuli, D., Martin, J., & Given, L.M. (2021). *1 in 2 primary-aged kids have strong connections to nature, but this drops off in teenage years. Here's how to reverse the trend.* The Conversation. <https://theconversation.com/1-in-2-primary-aged-kids-have-strong-connections-to-nature-but-this-drops-off-in-teenage-years-heres-how-to-reverse-the-trend-165660> This piece was co-authored by the full supervisory team (Hochuli, Given, and Martin) in support of their PhD student (Keith). The PhD research involved an external organisation, with Martin co-supervising as an industry partner. This piece has been read more than 11,000 times and garnered significant media attention.
 2. Here is an example linked to a major popular culture event: Forcier, E., & Given, L.M.. (2019). *After 8 years of memes, videos and role playing, what now for Game of Thrones' multimedia fans.* The Conversation. <https://theconversation.com/after-8-years-of-memes-videos-and-role-playing-what-now-for-game-of-thrones-multimedia-fans-117254> This piece was co-authored by the student (Forcier) and principal supervisor (Given), following the supervisor's recommendation to pitch an article ahead of the release of the final episode of Game of Thrones. This piece has been read almost 15,000 times and was featured in international media.

authoring articles and reports that are accessible and relevant to a broad readership. It is important to stress that all outputs, including media coverage, policy reports, popular publishing, and other non-academic and community engagement pieces should be listed on higher degree researchers' CVs. The research degree is a balancing act, so the natural caveat is that some public-facing writing is valuable, but too much may be counterproductive and delay degree completion.

Presenting skills

Higher degree researchers come from varied backgrounds, have different life experiences, and are different ages. However, for many, their first presentations to peers will be during their research degrees. For higher degree researchers who have progressed through undergraduate, honours and/or masters-level degrees, and onto the PhD, the knowledge of how to present, and what makes a good presentation, may be limited. As with finding their writing "voice," higher degree researchers will replicate what they see in classrooms, seminars, and academic conferences.

Unfortunately, even the most compelling academic presentations may not translate well (or easily) for a public or practitioner audience. It can take years for academics to hone their presentation skills (including the design of excellent slides) even within their own disciplines. Presenting to interdisciplinary teams requires translation of disciplinary content across academic contexts, where even the style and format vary. In the creative disciplines, for example, interactive exhibitions are the norm; in the humanities, it is common practice for researchers to write full papers, which they read to the audience. In the social sciences, PowerPoint slides are the norm, where academics "speak to" (rather than read) the content displayed. And, in the sciences, academic poster presentations provide for interactive engagement with the audience. All these forms of presentation are demonstrated to, and expected of, higher degree researchers by their supervisors and other scholars in their disciplines.

A person who cannot present well to academics will likely not present well to government, community, and industry stakeholders. However, the risks can often be greater for the individual, and for the reputation of the institution, in these contexts. Showing poor verbal communication skills, with slides packed with too much content, or based on a paper that has not been translated well for the specific audience, can have dramatic negative consequences in front of politicians and the media. Making a pitch for funding from an industry or community group that does not speak to that audience's needs, or using terminology they cannot understand, is almost certainly doomed to fail.

Most universities have media training programs for researchers that are available to higher degree researchers. Some universities have generated training modules that offer guidance, as well. The Three Minute Thesis (3MT) competition is one opportunity for higher degree researcher to consider how to present their research in a digestible and accessible format. And, many countries host events like Social

Sciences Week,³ Pint of Science, or Nerd Nite, which welcome speakers from across disciplines. Encouraging higher degree researchers to engage in these activities, or training exercises like Toastmasters, will pay dividends in unexpected ways, including enhancing professional networks and gaining media exposure.

Putting it into Practice — Holistic “Supervising for Impact” Discussion Prompts

A holistic approach should be used (and will evolve) throughout the research higher degree journey.

Step one: prepare for the conversation. Explain why an emerging dialogue around engagement and societal impact is important in terms of personal motivation, development, and career trajectory, and to get the most out of the higher degree by research experience.

Step two: make the time. These conversations can be challenging and sprawling. Adding them to the end of a conversation about thesis revisions may not be ideal, as the higher degree researcher will be focused on thesis work. Set aside dedicated time for these conversations.

Step three: encourage thinking aloud. Take notes and reflect on what the higher degree researcher has shared. Use open ended questions (including asking “why?”) and paraphrase to foster dialogue. Play devil’s advocate to foster critical reflection about impact-related work.

Step four: ask questions. Prompts could include: What kind of career will you pursue? Are you considering careers beyond academe? How can your research make a positive change in the world? What excites you about the potential contribution your research could make to society? Do you have experience communicating with the public? What kinds of skills do you need to engage with industry, government, or community? How can you make contacts outside academia to share research results?

Step five: follow-up. Continue the conversation and adjust supervisory practices to align with each person’s higher degree goals. Higher degree researchers will need different supports and opportunities to develop impact-related skills.

3. For example, the Academy of the Social Sciences in Australia hosts an annual Social Sciences Week event <https://socialsciencesweek.org.au/>

Building your academic profile: Be Googleable

Many institutions feature higher degree researchers on their websites, often as members of labs or research centres, and in relation to funded projects and scholarships. Unfortunately, the small amount of content that is typically profiled, and the lack of control by individuals to edit university-based pages quickly and easily, means higher degree researchers struggle to extend their reach.

Supervisors should develop their own publicly-facing websites to profile their work, and they should encourage their higher degree researchers to do the same. Researchers change roles and institutions and they need to have robust, stable websites that can follow them throughout their career. Using WordPress or other tools to create a professional website is a critical first step for supervisors and higher degree researchers. Personalised domain names and hosting are relatively inexpensive; and, websites can be as simple as an online CV and a short bio, or they can include listings of projects, partners, and multimedia presentations.⁴ In addition to scholarly achievements, the personal website can communicate capabilities (e.g., “I’m adept at mixed-methods, co-design, and knowledge translation”) and values (e.g., “my focus is on making life better for young mothers”), can showcase external engagement (e.g., reports, blog entries, podcasts), and provide evidence of societal impact (e.g., “my framework has been adopted in 31 care facilities across the country”).

The value of establishing a website early in the research degree process is that search engine optimisation (SEO) can take years to promote new sites to the front page of search results in Google and other search engines. When a higher degree researcher first creates their website, it may not be easily findable; but, by the time they are on the job market, employers and potential partners will find them quickly. Prospective higher degree applicants also use Google to locate potential supervisors, and they want to see project details for higher degree researchers who have been supervised previously. Robust websites can go a long way to attracting potential partners, funders, media, and individuals who want to read and cite researchers’ work. Professional websites can also help event organisers to quickly locate headshots, social media links, and biographies for inclusion in event programs.

In addition to creating professional websites, higher degree researchers should create profiles on international academic sites (such as Google Scholar) and maintain a current ORCID. Researchers should devote time during their higher degrees to building and maintaining these profiles, as well as growing their scholarly reputation through LinkedIn, X (formerly Twitter), Threads, BlueSky, and other social networking spaces. Higher degree researchers should also include these details on business cards and publications, to foster outreach through various channels.

4. See <https://www.wadekelly.com/> and <https://lisagiven.com/> for inspiration.

Conclusion

Supervising higher degree researchers to prepare them for societal impact work requires a holistic approach extending far beyond the traditional boundaries of thesis preparation. By emphasising the importance of the entire, end-to-end research process, including engagement with non-academic stakeholders and planning for potential societal impact, supervisors can empower higher degree researchers to make meaningful contributions to society. It is essential for supervisors to think beyond their institutional presence, to guide higher degree researchers in building both their academic and public-facing profiles, and to encourage engagement with industry, community, and government. By adopting these strategies, supervisors can shape a new generation of researchers who prioritise societal impact and contribute to a better future through strategic engagement.

CONCLUSION

Abbe Winter; Jillian Blacker; and Lauren Woodlands

This chapter concludes the book *Confident Supervision – Creating Independent Researchers* and reinforces the supervisory practices that the authors and editors have provided to help you become a more confident supervisor for your higher degree researchers. This chapter ends the book with a call for you to continue your own professional development as a research supervisor by continuing to make use of the resources provided here by the authors of the various chapters.

The focus of this eBook is on enhancing your professional practice as a research supervisor. It contains a range of information, from the importance of building a network to ways to help your higher degree researchers think about their futures, and hopefully you will be able to adapt some of these lessons into your own practice.

What this book has provided

Although this book is divided into four clear sections – *Collaborative Approaches*, *Capacity Building*, *Diverse Research Environments*, and *Future Focus*, a thematic analysis of the content shows a much closer alignment of concepts across the book. Despite our disciplinary and national differences, we are all largely writing about addressing the same key issues in research supervision – working together, writing, time, resources, and the higher degree by research process.

Theme 1: Collaboration

The theme of working together has been a core concept throughout this book, as well as being the explicit focus of Chapter 2. Many of the chapters are co-authored, clearly indicating the value we place on collaborative practices. One of the key things we want to reiterate here is the importance of building trusted and respectful collaborations and diverse and inclusive networks (including, but not limited to, communities of practice), as supervisory strategies for enabling independent researchers. To build your network, begin by reaching out within your own research area, whether that's in your own department or your university more broadly. Then look for ways to expand this network to include colleagues from other education providers as well as government, business, and community sectors. You could also reach out to the authors of the various chapters in this book, as well as to the editors, to continue the conversations they have started here.

As part of this process, it can be useful to think about the tangible markers of collaboration that you can use to track your progress and development. For example:

- What does collaboration look like for you as a supervisor?
- Do you collaborate with colleagues?
- Do you collaborate with your higher degree researchers?
- What might collaboration look like for your higher degree researchers?
- Who could they be collaborating with?
- Are there people you can introduce your higher degree researchers to, who they could start collaborating with?

Theme 2: Writing

In higher education a lot of our collaboration occurs through writing together. Although only Chapter 6 explicitly addresses the mechanics of creating writing ecologies, writing practices are woven throughout the book, because the thesis is a key requirement for the completion of the higher degree, and is often the most significant piece of writing a person will complete, at least in terms of size.

It is important to reflect on how you can leverage this for your higher degree researchers, and yourself. For example:

- Where are the opportunities for you and your higher degree researchers to write, so that you normalise the cyclic process of drafting, reviewing, and having multiple iterations of a document-in-progress?
- How can you model the reading and reflection which is integral to thesis writing?
- How can you enable peer discussion of ideas and concepts throughout the writing process?

Theme 3: Time

Time is needed for all of the practicalities discussed throughout this book – all of the drafts and iterations of the analysis, as discussed in Chapter 2. Building a network (Chapter 3) takes time, becoming employable (Chapter 11) takes time, and even designing and enacting the data collection process (Chapters 9 and 12) often takes longer than we anticipated! Within the research journey, time can be viewed through different competing lenses which all vie for the attention of a higher degree researcher. It is your role as a supervisor to help your higher degree researchers to know the requirements for the successful completion of their studies and how familiarity with various time requirements supports this success.

It is useful to think about how this can be done. For example:

- What is your relationship with research time?
- How do you manage your workload to achieve work-life harmony?
- How have you explained candidature timeline requirements to your higher degree researchers?
- What is your own relationship with the timelines required by the university?
- Do you describe time in punitive terms or do you use a strengths-based approach to maximising time and energy?
- How do you discuss time with your higher degree researchers?
- How do you discuss time with your colleagues?
- Do you harness time, manage it, plan for it, work with it?
- How do you celebrate reaching goals with your higher degree researchers?

Theme 4: Resources

We now approach the more prevalent themes discussed within this book. The first one is resources – the people, policies, and practicalities available both within and beyond our universities to help support and sustain us and our higher degree researchers. These resources are the things beyond us that we can draw upon – from the magnificent support of librarians, through to the clear guidance of ethicists, and on to the precious partnerships with Indigenous support units.

It is important to consider how you can connect with relevant resources available to you and your higher degree researchers. For example:

- Take a moment to make a list/mind map of the resources available to you.
- Is anything missing?
- Where can you go for what you need?
- How have you shared these with your higher degree researchers?
- How and with whom can you advocate for what your higher degree researchers need?

Theme 5: The Degree

Finally, we come to the degree itself – the reason that our higher degree researchers are with us. Our goal as research supervisors is to build our higher degree researchers' capacity, to help them become confident and capable researchers in their own right, able to share with the world their original ideas and analysis. The various chapters throughout this book have provided numerous suggestions for ways to assist our higher degree researchers to complete their degrees, as well as ways for us to reconceptualise our own work as academic supervisors.

When reflecting on this theme, consider the following:

- What did achieving your research degree mean for you?
- What does it represent in the life of your higher degree researchers?
- How has the title of Doctor changed you as a thinker and a learner?
- What completion and milestone celebration rituals do you encourage and pass on to your successful higher degree researchers?

Conclusion

As research supervisors, we need to be constantly reflecting on and in our practice (Schön, 1983) to ensure we are actioning, enabling, creating, and modelling our best practice for our higher degree researchers. To be successful supervisors, we all need to be lifelong and continuous learners. No matter where you are in your supervisory journey, there are always ways to learn and improve. As humans, we learn as well from the actions (and mistakes) of others as we do from our own – indeed, people often learn better from the mistakes of others, because we have distance (spatial, emotional, and temporal) from the mistakes and can more clearly see the lessons.

This book was developed as a professional development resource for you, so take what you need from it now, and feel free to come back to it again in the future when your needs have changed. As Edwards et al. (1995) argue in the *Tracking Postgraduate Supervision* appendix to this eBook, it is important to revisit your supervisory practices, and to select what you need from the available resources. Remember that your practice and needs as a supervisor will also change and evolve as your experience grows, so checking back every year will give you plenty of opportunities to make use of this free resource to support your supervisory practice.


Additional Resources

To build and evidence your practice:

1. Review the contents of this book – are there any chapters that you need to re-visit to help you become a more confident supervisor of independent researchers?
2. In a year or so, come back and see if your needs and experience have changed what you can take from the existing chapters. Then come back each year and do the same.
3. Use the book to make a plan for mentoring your higher degree researchers – you may want to use a chapter as a focus for a few weeks or months, or you may wish to choose one suggestion to enact for a while.

4. Keep reflecting on your practice – what can you action, enable, create, and model?

References

While most of these sources and additional readings are freely available, some are not. The lock icon  beside an entry indicates that the source *may* be available from your library.

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Temple Smith. 

GLOSSARY

AIRS

An information literacy training tool for higher degree researchers. The framework highlights resources available from libraries and other areas of higher education institutions. AIRS learning content is freely available from a public facing website, which can be accessed by anyone at any time. It is an open educational resource that is Creative Commons licensed (CC BY-NC-SA 4.0) so it can be freely used and adapted for training purposes.

collaborations

Research collaborations could occur within your institution, nationally, internationally or with external partners such as government and industry.

collaborative capacity

The use of distributed leadership and faces of the informed researcher to activate the collaborative process.

Distributed leadership

A form of leadership that overcomes power imbalances, empowering deeper engagement, and acknowledge of contribution.

DOI

A digital object identifier (DOI) is a unique string of letters and numbers used to identify to a specific research output and to provide a persistent link to it online.

engagement

The Australian Research Council defines research engagement as “the interaction between researchers and research end-users outside of academia, for the mutually beneficial transfer of knowledge, technologies, methods or resources”. (Reference: Australian Research Council. (n.d.). *Engagement and impact assessment 2018-19*. <https://dataportal.arc.gov.au/ei/nationalreport/2018/pages/introduction/index.html?id=definitions>)

Graduate Research Engagement Assessment Tool (GREAT)

An early intervention communication tool to assist supervisors and higher degree researchers identify, assess, and problem-solve potential risks.

higher degree researchers (HDRs)

A term used to reference students enrolled in masters and doctorates by research, reflecting their status as researchers in development.

impact

The Australian Research Council defines research impact as “the contribution that research makes to the economy, society, environment or culture, beyond the contribution to academic research”.

Australian Research Council. (n.d.). *Engagement and impact assessment 2018-19*. <https://dataportal.arc.gov.au/ei/nationalreport/2018/pages/introduction/index.html?id=definitions>

ORCID

ORCID stands for Open Researcher and Contributor Identification and is an example of a persistent identifier. An ORCID number looks like 0000-0002-2771-9344 or is sometimes expressed as <https://orcid.org/0000-0002-2771-9344>.

PNGUoT

Papua New Guinea University of Technology

productivity

A researcher’s productivity is often measured by the number of quality published research outputs over a set timeframe.

quality

Research output quality is often determined by the number of citations an article, book or book chapter attracts over a set timeframe.

research integrity

relates to the principles and standards that promote honesty, transparency, and reliability throughout the research process.

seven faces of informed researcher

Seven perspectives that can be applied to enable effective information sharing and sustainable collaboration between stakeholders from different disciplines and sectors.

ACCESSIBILITY STATEMENT

The web version of this resource has been designed with accessibility in mind and incorporates the following features:

- Designed to consider the needs of people who use screen reading technology.
 - All content can be navigated using a keyboard.
 - Links, headings, and tables are formatted to work with screen readers.
 - Images have alt text.
- Information is not conveyed by colour alone.

Other File Formats Available

In addition to the web version, this book is available in several file formats, including PDF and EPUB (for ereaders). Choose from the selection of available file types from the 'Download this book' drop-down menu. This option appears below the book cover image on the eBook landing page.

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VERSION HISTORY

This page provides a record of changes made to this eBook after publication. Each set of edits is acknowledged with a 0.1 increase in the version number. The downloadable export files available for this eBook reflect the most recent version.

Version	Date	Details
1.0	15 Dec 2023	This guide is first published on the JCU Open eBooks platform
1.1		
1.2		